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# THE LARYNGOSCOPE

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DEVOTED TO DISEASES OF THE  
EAR - NOSE - THROAT

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**DR. M. A. GOLDSTEIN**  
Managing Editor and Publisher.

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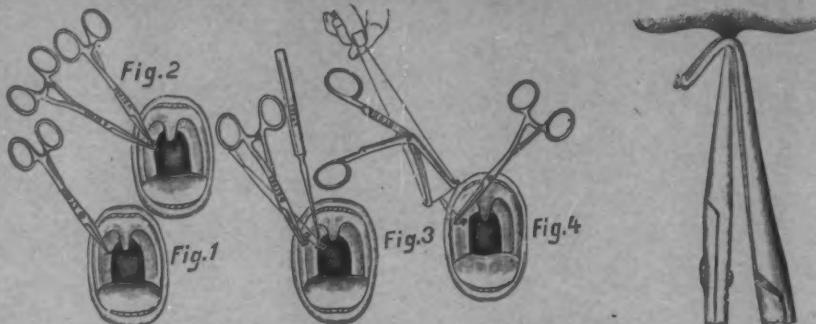
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Medical  
Year

# THE LARYNGOSCOPE.

VOL. XXXVIII

JANUARY, 1928.

No. 1

## ORIGINAL COMMUNICATIONS.

(Original Communications are received with the understanding  
(that they are contributed exclusively to THE LARYNGOSCOPE.)

### ENDOSCOPIC EXPERIENCES.\*

DR. E. LEE MYERS, St. Louis.

*Case 1. Peanut Brittle in Lung* (Plate II, Fig. 3): Two-year-old child, while eating peanut brittle had a severe coughing spell, but did not become blue. After about 10 days, it became almost suffocated. The characteristic signs of obstructive emphysema was missing (Iglauer-Manges sign) X-ray showed fan, base downward, left side, interpreted as area of arachidic bronchitis. Using a 4 m.m. bronchoscope, this area aspirated but no foreign body found, although child made a complete recovery.

No anesthesia; duration of tubing, 11 minutes.

*Case 2. Peanut Husk in Lung* (Plate I, Fig. 1; Plate II, Fig. 2): Fifteen-year-old boy, skating, bumped into fence, aspirating the husk of a peanut. The chief complaint was paroxysm of coughing. Physical examination reveals wheezing sounds. X-rays at end of expiration shows small area of emphysema in left lung at the upper lobe; during inspiration, normal. Bronchoscopy difficult because of thin serous secretion in both lungs. In the right main stem bronchus a stricture was found, probably edematous, which was dilated and a large-sized peanut husk removed. Iglauer-Manges sign was negative.

No anesthesia; duration of tubing, 37 minutes.

These two cases point out difficulties in diagnosis, which are frequent in the nonopaque foreign body, when the ingress and egress of air is not impeded.

*Case 3. Grain of Corn in Lung* (Plate I, Fig. 2): Three-year-old girl, while feeding chickens, aspirated a grain of corn. There was

Bronchoscopy Department Jewish Hospital.

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H.W

very little dyspnea, audible slap, asthmatoïd wheeze, palpitory thud or tracheal flutter. In spite of mother's insistence that child choked on grain of corn, physicians in one hospital insisted that child needed tonsillectomy.

X-ray examination was not made prior to bronchoscopy, as radiographer was not available. No anesthesia. Removal of tremendously swollen grain of corn from right bronchus in 10 minutes.

*Case 4. Peanut Kernel in Lung. Dr. R. J. Payne's Case* (Plate II, Fig. 1): Two-year-old child. Seen in consultation with Drs. R. J. Payne and G. E. Hourn. Question of invaded lung graphically shown by airiness of invaded lung. Obstructive emphysema present. Tracheotomy was necessary within 12 hours to relieve dyspnea and drain inflammatory products of peanut irritation. Recovery. Removal by Dr. Hourn with 4 m.m. bronchoscope; peanut forceps. No anesthesia.

*Case 5. Grain of Corn in Trachea (Early Case):* Two-year-old child, very dyspneic, severe spasmody cyanosis. During the bronchoscopy larynx was seen very edematous, for which it was thought best to tracheotomize, the corn being removed through the tracheal wound. Kahler-Leiter apparatus was used, ether anesthesia. Recovery. Deep anesthesia is contraindicated in cases having respiratory embarrassment.

*Case 6. Peanut Kernel in Lung. Dr. U. S. Short's Case:* Two-and-one-half-year-old child. Six physicians disregarded mother's statement that illness began with choking spell while eating salted peanuts. Eight weeks elapsed before recommendation was made to explore lungs bronoscopically. Removal of disintegrated peanut in left lung. Tracheotomy was necessary to drain arachidic suppuration. Multiple abscesses exhausted child. Thoracotomy being done. Death in 31 days. Bronchoscopies; one for foreign body; two for drainage. No anesthesia; 4 m.m. bronchoscope; time not observed.

*Case 7. Bean in Lung (Early Case):* Fifteen-months-old baby. While on floor suddenly became blue. Child brought to hospital and for considerable time afterwards was treated for bronchitis, pneumonia, etc. Child in extreme toxemia from vegetal bronchitis. Removal of swollen bean, practically disintegrated after a difficult search in swollen tissues. Immediately afterward, air could be heard going into terminal portion of right lung. Child died of exhaustion from arachidic suppuration.

Bronchoscopy with Kahler-Leiter apparatus, chloroform anesthesia.

*Case 8. Watermelon Seed in Lung (Plate I, Fig. 3; Plate II, Fig. 4):* Fifteen-months-old baby became blue while on floor. Around

child there could be seen pieces of egg shell, paper, and a number of watermelon seeds. X-ray plates were negative for the signs of obstructive emphysema. Physical examination within a short time after accident showed the lung to be full of numerous rales, wet in character. This, coupled with a peculiar fremitus to the hand, and a laryngeal bark, made the diagnosis of vegetal bronchitis very likely, and especially that type due to watermelon seeds, which is very irritating.

Bronchoscopy, with no anesthesia; 4 m.m. bronchoscope and small side grasping (mosquito) forceps. Duration of bronchoscopy, 3 minutes. Recovery.

*Case 9. Cockleburr in Larynx. Dr. W. M. C. Bryan's Case:* Seen in collaboration with Dr. Bryan. Young boy, about 12 years, attempting to remove cockleburr from mitten, aspirated same into his larynx. Only symptom, hoarseness, and that very slight.

Removed by using Lynah's bivalve laryngeal speculum with a small amount of cocaine. Recovery.

*Case 10. Cockleburr in Lung (Plate I, Fig. 4; Plate II, Fig. 5):* Twenty-year-old boy, attempting to remove cockleburr from mitten, aspirated the burr into the air passages, and immediately began coughing. He became hoarse for a while. X-ray plate negative for obstructive emphysema. There was a history of spitting blood.

Bronchoscopy under local anesthesia with a 7 m.m. bronchoscope. Operative difficulties were due to the foreign body being surrounded with secretion and bloody coagulum. Removal with fenestrated peanut forceps. Duration, 7 minutes. Recovery.

*Comment:* Here again is the nonopaque foreign body casting no shadow, or making no contrast as in a definite ball valve phenomena as seen in peanut kernel cases. Case 8 also was negative for the same reason.

*Case 11. Open Safety Pin in Lung (Plate I, Fig. 5; Plate II, Fig. 6):* Fifteen-year-old girl, while dressing baby had swallowed the pin. An X-ray plate by the local surgeon showed pin in what appeared to be the esophagus. A cutting operation was performed, and upon reaching the esophagus, it was noticed that the pin had disappeared. A second X-ray plate showed the pin to be point up in the right lung and dangerously near mediastinal vessels. If the pin had pointed inward instead of outward, definite danger of perforation would have been imminent. In a preliminary dissection of a cadaver, and some work on the dog, it was found that the pin could be straightened out over the lip of the bronchoscope. This proved to be the best method of removal, as the point could not be engaged after numerous trials.

*Symptoms:* At no time was there a cough, or, as she expressed it, she suppressed it.

Bronchoscopy, ether anesthesia. Recovery uneventful.

*Comment:* The primary surgical operation in the neck complicated the case, yet the child made an uneventful recovery. Lateral X-ray views should be made of all foreign body cases such as the above.

*Case 12. Open Safety Pin in Lung* (Plate I, Fig. 6; Plate II, Figs. 7 and 8): Thirty-six-year-old woman while dressing a child aspirated a pin. The first radiograph showed the pin, which was interpreted as in the esopahgus. A barium meal swallowed during a 7-foot X-ray film showed the point of the pin to be outside of the food passages.

*Symptoms:* At no time was there a cough. Bronchoscopy under local anesthesia. The point being stuck in mesial wall, pin being jockeyed up to tracheal division, where it was tumbled backwards into the opposite lung, from which it was removed with the ends trailing. Time, 4 minutes. Recovery.

*Case 13. Open Safety Pin in Subglottic Larynx* (Plate I, Fig 7; Plate II, Figs. 9 and 10): Two-year-old child. Father attempted to diaper child. Safety pin was missing. No cough or dyspnea. Under X-ray examination in an anterior posterior position it might be interpreted as esophageal intruder, the pin appearing closed; a lateral picture showed the pin to be in the larynx, point up, and in the subglottic larynx.

Bronchoscopy, no anesthesia, small laryngoscope, point being disengaged by "jig-sawing". Time, 3 minutes. Recovery.

*Case 14. Straight Pin in Right Upper Lobe. Dr. I. Dee Kelley's Case* (Plate III, Fig. 1): In collaboration with Dr. Kelley, a child in whom the pin was first seen in hypopharynx by the intern, was inadvertently allowed to be aspirated during attempt at removal. Duplication of the problem now existing was done on a cadaver, where it was evident that pin was fully three-quarters of an inch out of direct vision. The first bronchoscopy failed to reveal pin.

Second bronchoscopy, under gas anesthesia sufficient to introduce bronchoscope. Using a vertebrated (Lynah) aspirating tube, guided by the fluoroscope under direction of Dr. Leroy Sante, it was placed in the upper lobe as near pin as possible. At this point a Pilling pump, using the full power of vacuum was exerted, and the pin could be seen as it jumped into the aperture of the tube. Removal from tube with peanut forceps by Dr. I. Dee Kelley.

*Comment:* The use of suction for foreign bodies is not to be deprecated. In a similar case, a confrere removed a straight pin from the lung which was not seen under ocular guidance.

*Case 15. Open Safety Pin in the Esophagus* (Plate I, Fig. 8; Plate III, Fig. 2): Young infant was being dressed by mother when a pin dropped into the child's mouth. Radiograph showed the pin to be in the cricopharyngeus. Overnight it had dropped the distance of about one vertebra, according to the second radiograph.

The size of the pin made it possible to push it into the stomach with the aid of the fluoroscope directed by Dr. Leroy Sante. The pin was then straightened over the lip of the tube and removed.

Endoscopy, no anesthesia; 4½ minutes. Recovery uneventful. Large rotation forceps in keeper hole; 6 m.m. esophagoscope.

*Case 16. Open Safety Pin in the Esophagus* (Plate I, Fig. 11; Plate III, Fig. 3): Young infant while being dressed swallowed an open safety pin. A 7-foot X-ray film gave information as to the exact size of pin. Under fluoroscopic guidance, directed by Dr. Sante, the disimpacted point was straightened out and the keeper was then held taut in the end of the scope until the pin was safely in the stomach. Here it was straightened out over the lip of the tube.

No anesthesia; 5½ minutes.

Large rotation forceps in keeper hole. Tucker forceps was used to align perforating point; 6 m.m. esophagoscope. Recovery uneventful.

*Case 17. Two Open Safety Pins in the Hypopharynx at the Same Time* (Early Case), (Plate I, Fig. 10; Plate III, Fig. 4): An 11-months-old infant, while playing on the floor, swallowed two open safety pins. Under ether anesthesia, the patient was suspended on Lynah's bivalve speculum. First pin removed by the consultant, Dr. L. K. Guggenheim; second by the writer.

No damage to mucosa, recovery uneventful. In this case the points of the pin had not, fortunately, penetrated the mucosa, and a jigsawing method was necessary to keep them from doing damage.

*Case 18. Straight Pin Transfixed in the Laryngopharynx* (Plate I, Fig. 9): Five-year-old child (early case). Ether anesthesia, was suspended on Lynah's bivalve speculum and the pin removed from where it lay in a transverse position just above the purse of the cricopharyngeus. Radiograph and specimen have been misplaced.

Instruments: Lynah's bivalve speculum, straight forceps, catching the nearest end of pin and disimpacting. Removal in about 15 minutes. Recovery uneventful.

*Case 19. Straight Pin in Esophagus* (Early Case), (Plate III, Fig. 5): Fifteen-year-old child. Using Kahler-Leiter apparatus, under ether anesthesia, Dr. Guggenheim and I believed we could see

the pin; however, it was not found after numerous radiographs taken of different parts of the entire body.

Child made an uneventful recovery. In the final clean-up of the room, a pin was found under operator's stool. Does this clear up a "mystery" case?

*Case 20. Wire in Laryngopharynx. Dr. U. S. Short's Case* (Plate I, Fig. 14): While eating an apple the patient felt something stick in her throat. Mirror examination showed a small protruding substance, black in color, just anterior to the larynx in the aryepi-glottic fold. This was removed under local anesthesia with Schmidt's grasping forceps.

*Case 21. Metal Ring in the Esophagus* (Plate I, Fig. 15; Plate III, Fig. 7): Four-year-old child, having difficulty in swallowing, vomiting but no dyspnea. During tube work, rotation forceps kept slipping off the ring. Interpretation of radiograph was that the ring was closed, although it appeared open. The ring was pushed down, and ring removed with rotation forceps, not without some difficulty. The

Plate I—Fig. 1. Peanut husk when removed.

Plate I—Fig. 2. Grain of corn. When removed, twice the size.

Plate I—Fig. 3. Watermelon seed removed from right main stem bronchus.

Plate I—Fig. 4. Cocklebur.

Plate I—Fig. 5. Open safety pin removed from right lung.

Plate I—Fig. 6. This pin was jockeyed up to division and tumbled into opposite lung and removed with point trailing.

Plate I—Fig. 7. Safety pin removed from larynx.

Plate I—Fig. 8. Safety pin removed from esophagus.

Plate I—Fig. 9. Straight pin transfixed in the hypopharynx. Removed under suspension.

Plate I—Fig. 10. Two safety pins removed from esophagus.

Plate I—Fig. 11. Safety pin removed from esophagus.

Plate I—Fig. 12. Sparerib bone removed from esophagus, young boy..

Plate I—Fig. 13. Key removed from esophagus.

Plate I—Fig. 14. Wire in laryngopharynx.

Plate I—Fig. 15. Metal ring removed from esophagus.

Plate I—Fig. 16. Nickel removed from esophagus.

Plate I—Fig. 17. Slug removed from esophagus.

Plate I—Fig. 18. Piece of walnut hull which was removed while moving in the left bronchus.

Plate I—Fig. 19. Fish hook in dog patient—Dr. A. Darling, St. Louis.

Plate I—Fig. 20. Half dollar removed from esophagus.

Plate I—Fig. 21. Penny removed from esophagus.

Plate I—Fig. 22. Turbine consisting of two plates removed from lung. The end plate having pointed ends, permitting of anchorage.

Plate I—Fig. 23. Soup bone removed from region of left upper lobe.

Plate I—Fig. 24. Chicken bone removed from esophagus, 16-year-old boy. X-ray was negative. The barium filled capsule not being used.

Plate I—Fig. 25. Bone removed from beneath cotton pledget.

Plate I—Fig. 26. Piece of cartilage removed from crico-pharyngeus.

Plate I—Fig. 27. Frog bone in esophagus. X-ray also negative.

Plate I—Fig. 28. Bone removed from esophagus.

Plate I—Fig. 29. Pork chop bone removed with meat attached.

Plate I—Fig. 30. Chicken bone in esophagus. X-ray also negative.

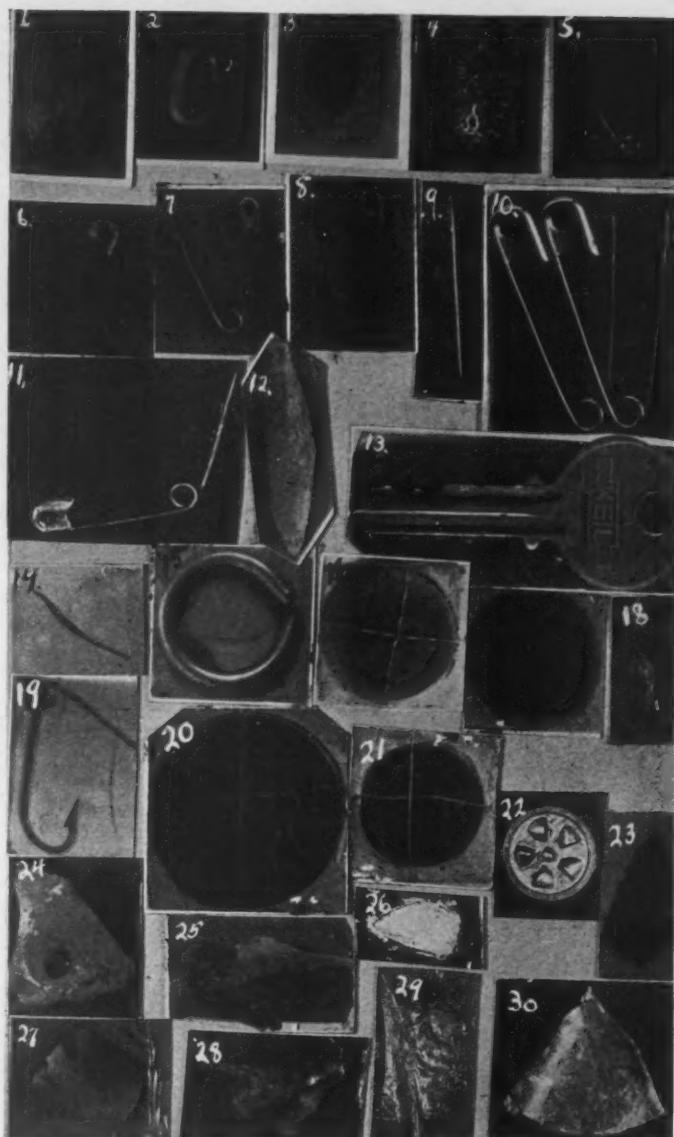


Plate I.



open ends were held tightly in edematous tissues which had begun to grow dark. The child was two days before an endoscopic examination was made. A low grade mediastinal infection made recovery somewhat slow.

No anesthesia except a large dose of morphin; a 6 m.m. esophagoscope was employed. Time, 14 minutes.

*Case 22. Metal Key in Esophagus* (Plate I, Fig. 13; Plate III, Fig. 6): Seven-year-old boy, while running up stairs, swallowed a door key. The only discomfort was epigastric pain. X-ray showed key almost down to the cardiac end of the esophagus. Notwithstanding  $\frac{1}{2}$ -grain morphin, boy was exceedingly hard to narcotize. No anesthesia; 7 m.m. full lumen esophagoscope; side grasping forceps. Time, about 7 minutes actual time, considerable lost, refractory child.

*Case 23. Marble in Esophagus. Dr. U. S. Short's Case* (Plate III, Fig. 9): Five-year-old girl. Chief complaints, dyspnea and difficulty in swallowing. In collaboration with Dr. Short, it was found that the practical removal of the globe depended upon an instrument such as mechanical finger, which could be introduced alongside of the intruder, intending to bring the terminal end at a right angle. However, during the tubing a click was heard which caused the child to grunt. It was then noticed that spasm of the cricopharyngeus was relieved. The foreign body passed per vias naturales.

No anesthesia; 7 m.m. esophagoscope; Jackson's safety pin closer ready to be used as a mechanical finger.

*Case 24. Fish Hook in Esophagus; Dog Patient. A. Darling, M. D., D. V. S.* (Plate I, Fig. 19): A small Boston bull was seen dragging a fish-pole down the river bank. He had attempted to eat the liver bait, and hung up on its attachment. Under morphin, it was clear that the hook had been completely buried in the region of the

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Plate II—Fig. 1. Dr. Payne's case. Peanut kernel in right lung. Notice typical Iglauer-Manges sign, i.e., obstructive emphysema invaded lung. Tracheotomy necessary to relieve arachidic irritation.

Plate II—Fig. 2. Iglauer-Manges sign negative. This X-ray shows slight emphysema of the left lung.

Plate II—Fig. 3. On the left side can be seen fan-shape area. This drowned lung was aspirated in bronchoscopy. Iglauer-Manges sign negative. Recovery.

Plate II—Fig. 4. X-ray negative for foreign body.

Plate II—Fig. 5. X-ray fairly negative with the exception of a small area of drowned lung in right base.

Plate II—Fig. 6. Open safety pin in right lung. The first surgeon had opened the neck to remove pin from esophagus.

Plate II—Fig. 7. Open safety pin appears as in esophagus.

Plate II—Fig. 8. Barium meal; 7-foot X-ray film showed pin in left lung.

Plate II—Fig. 9. Pin appears closed and in the esophagus.

Plate II—Fig. 10. Lateral X-ray shows that pin is open and in the air ~~passages~~.

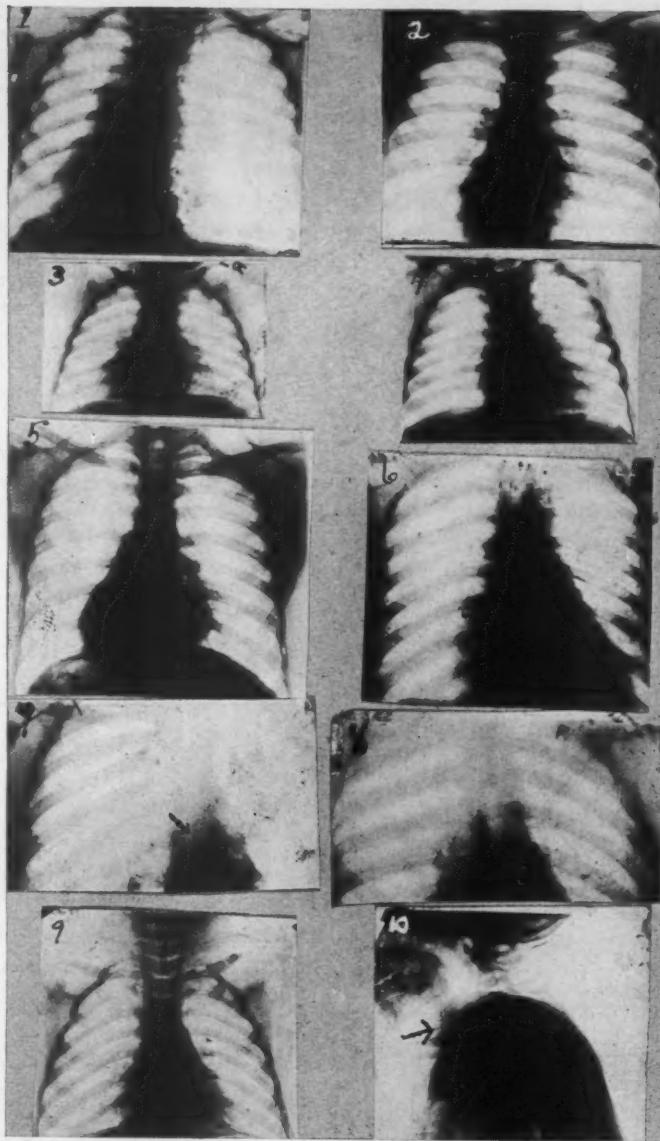


Plate II.



cricopharyngeus. The small piece of string leader could be seen in a low position, while on palpation with the spatular end of the hypopharyngoscope, the barb of the hook could be made out higher in position. Using the string as a tow line, it was possible by exerting counter-traction to direct the hook to go through anti-clockwise movements, thereby disimpacting it from the mucosa. Dog made a complete recovery.

*Case 25. Necktie Clasp in Trachea* (Plate III, Fig. 8) : Five-year-old boy, sent to St. Louis with request for an intubation for laryngeal diphtheria. On close questioning, parents admitted missing a necktie clasp. Child in urgent dyspnea, there being barely time to make an X-ray plate. The intruder was seen very high in trachea. Tracheotomy was very difficult because of large thymus, but relief of air hunger was necessary as a life-saving procedure.

Necktie clasp was removed by consultant, Dr. L. K. Guggenheim, through tracheotomy wound.

*Comment:* Here again is shown the advisability of treating dyspnea by tracheotomy where it is outstanding symptom. Laryngeal and tracheal foreign bodies are frequently misdiagnosed as diphtheria.

*Case 26. Whistle in the Lung* (Plate I, Fig. 22; Plate IV, Figs. 1 and 2) : Twenty-four-year-old woman, while showing child how to blow a siren, aspirated the turbine of whistle. First X-ray picture showed intruder to be in esophagus, apparently. Barium meal cleared up differential diagnosis. During the introduction of the bronchoscope, the foreign body was suddenly lost during expulsive cough. Feeling that it was somewhere in the larynx, the scope was gradually withdrawn, but it had dropped off into esophagus, and was recovered in the stools some hours later. Patient made complete recovery.

Bronchoscopy; local anesthesia, 7 m.m. bronchoscope.

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Plate III—Fig. 1. Dr. I. Dee Kelley's case. Pin in right upper lobe.

Plate III—Fig. 2. Open safety pin in the esophagus. Wait of 24 hours, pin had dropped about one vertebrae. Removal by pushing pin into stomach with the aid of fluoroscope.

Plate III—Fig. 3. Open safety pin in esophagus. Same problem as in Case 15 with exception of disimpaction of perforating point. Method of removal identical.

Plate III—Fig. 4. Two safety pins in the esophagus. Removal by suspension.

Plate III—Fig. 5. "Mystery" case. Pin seen in radiograph not found during endoscopy. Recovery. There was a pin on the floor.

Plate III—Fig. 6. Key in esophagus almost to cardia.

Plate III—Fig. 7. Metal ring in esophagus. Notice open end, which was partially presenting. Necessary to rotate downward for proper presentation in removal.

Plate III—Fig. 8. Dyspnea case; 5-year-old boy diagnosed diphtheria. Close questioning brought out disappearance of necktie clasp, which was found in trachea.

Plate III—Fig. 9. Dr. U. S. Short's case. Marble in esophagus associated with dyspnea.

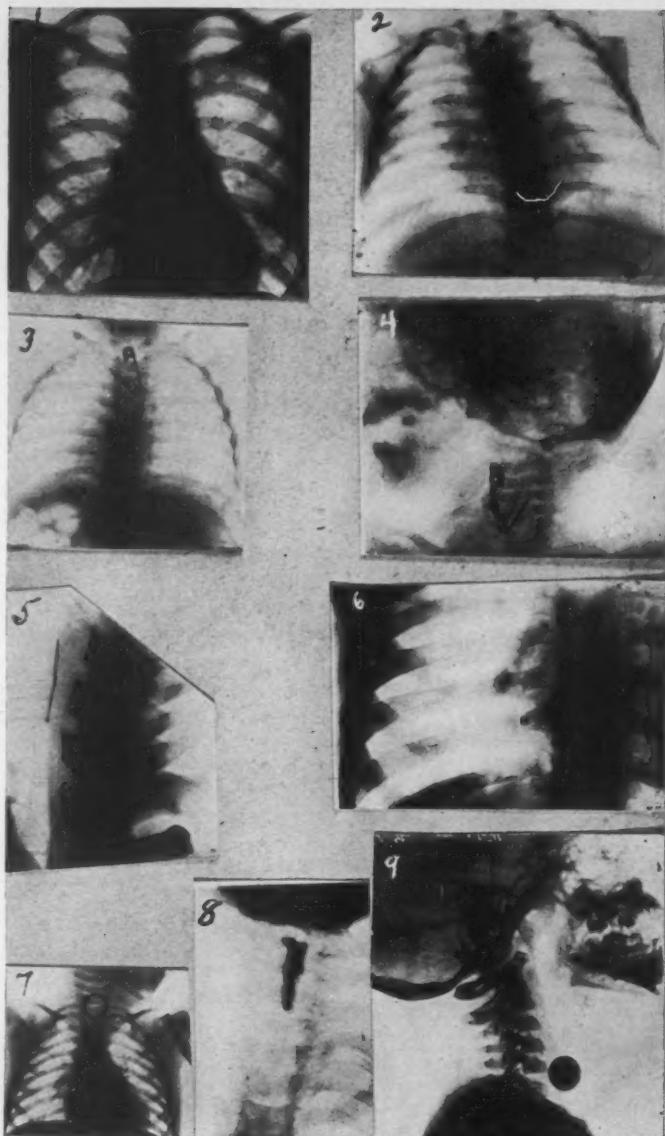


Plate III.



*Case 27. Piece of Glass Bracelet in the Lung. Dr. R. J. Payne's Case* (Plate IV, Fig. 3): Case in collaboration with Dr. Payne. Seven-year-old boy, aspirated "something" while being spanked. This was said to be a piece of glass bead at one time; at another, a part of an automobile windshield. A stereoscopic Roentgenogram made us feel that we were dealing with an arc of a glass bracelet.

In two prior broncoscopies, glass could be seen, but could not be removed because of a strictured bronchus and lack of forceps space. With the help of a specially constructed expansile forceps (Pillings) the stricture was ironed out, and the glass removed with a large-sized meat forceps.

Bronchoscopies: 1, 2, 3, 7 m.m. bronchoscope, expansile forceps for dilating stricture; meat forceps for removal.

*Comment:* The peculiar angulations of the curved cylinder of glass made this case especially difficult, also lack of knowledge of what we were after. Dog work with the use of a number of glass substances helped materially in overcoming difficulties presenting. Drowned lung is noted in X-ray plate. Complete recovery.

*Case 28. Half Dollar in the Esophagus:* Thirteen-year-old boy. The coin stuck in the usual place. Early case under chloroform. The coin slipped down, during the employment of the Kahler-Leiter apparatus.

*Case 29. Half Dollar in Esophagus* (Plate I, Fig. 20; Plate IV, Fig. 5): Fifteen-year-old girl. The coin was engaged by the crico-pharyngeus and caused some dyspnea and difficulty in swallowing. Local anesthesia; 7 m.m. esophagoscope; removed by hypopharyngoscope with down jaw forceps.

*Comment:* The half dollar problem is uncommon, except in the older children. Dyspnea is apt to be present.

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Plate IV—Fig. 1. Turbine from siren whistle seemingly in esophagus.  
Plate IV—Fig. 2. Barium meal and patient in quarter lateral position reveals intruder outside of esophagus. Foreign body removed from left lung.

Plate IV—Fig. 3. Dr. R. J. Payne's case of piece of glass bracelet in right lung. Noticed drowned lung beneath intruder.

Plate IV—Fig. 4. Atypical Iglauder-Manges sign caused by soap bone permitting ingress of air, but not allowing all of the air to escape on expiration.

Plate IV—Fig. 5. Half dollar in esophagus, 15-year-old girl.

Plate IV—Fig. 6. Showing the futility of A-P position. Very thick bismuth meal faintly shows up foreign body.

Plate IV—Fig. 7. Barium soaked cotton shows stopping at superior aperture. A quarter lateral position is the ideal position for foreign bodies in the upper esophagus; not used in this case.

Plate IV—Fig. 8. Penny in esophagus. Broken Bruning below foreign body.

Plate IV—Fig. 9. Lead slug in esophagus, 18-months-old child.

Plate IV—Fig. 10. Nickel in esophagus.

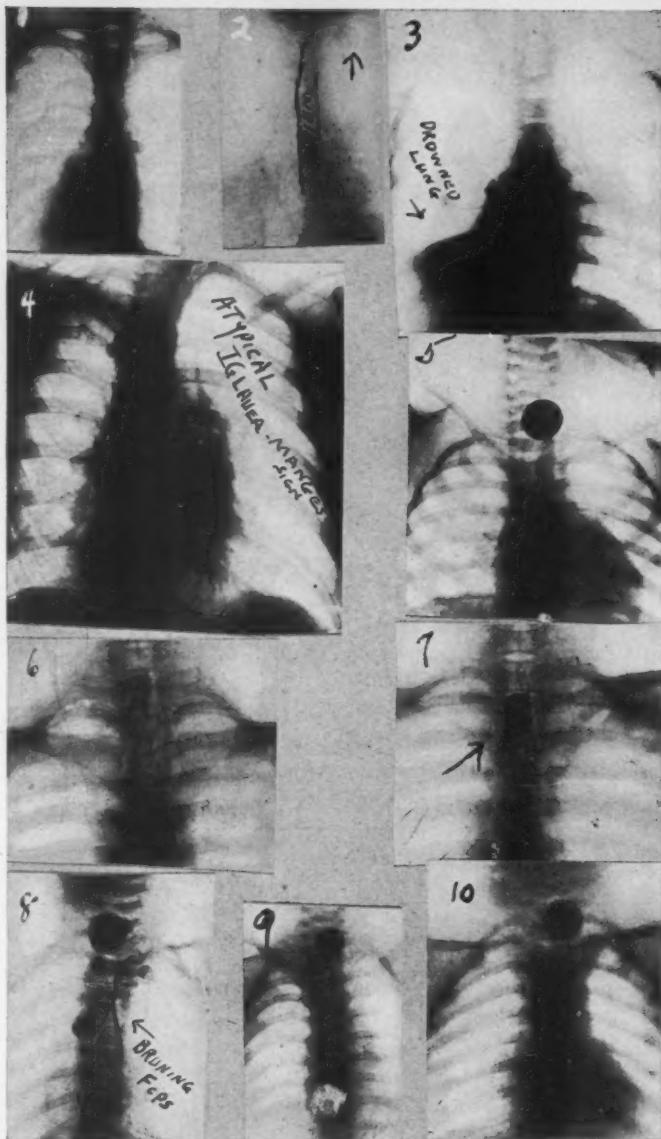


Plate IV.



*Case 30. Nickel in Cricopharyngeus Shelf* (Plate I, Fig. 16; Plate IV, Fig. 10): Three-year-old child. Early case. Chloroform anesthesia. Removal with the Brunings apparatus.

*Case 31. Nickel in Cricopharyngeus Shelf* (Early Case): Four-year-old child. Chloroform anesthesia. Removal with the Brunings apparatus.

*Case 32. Nickel in Cricopharyngeus Shelf*: Two-year-old child. No anesthesia. Recovery through hypopharyngoscope with down jaw forceps.

*Case 33. Nickel in Cricopharyngeus Shelf*: Three-year-old child. No anesthesia. The coin slipped away, just forward of esophageal speculum; 6 m.m. esophagoscope was used for further inspection. Recovery.

*Case 34. Nickel in Cricopharyngeus Shelf*: Four-year-old child. Recovery with down jaw forceps through esophageal speculum.

*Case 35. Penny in Cricopharyngeus Shelf*: Eighteen-months-old child. Early case. Under chloroform anesthesia with the Kahler-Leiter apparatus. Penny slipped away.

*Case 36. Penny in Cricopharyngeus Shelf*: Two-year-old child. Early case. Under chloroform anesthesia, the penny slipped down through Kahler-Leiter apparatus.

*Case 37. Penny in Cricopharyngeus Shelf*: Two-year-old child. Early case. Recovery under chloroform anesthesia with the Kahler-Leiter apparatus.

*Case 38. Lead Slug in Cricopharyngeus Shelf* (Plate I, Fig. 17; Plate IV, Fig. 9): Eighteen-months-old child. A slug of the size of nickel was removed under the laryngoscope with down jaw forceps.

*Case 39. Penny in Cricopharyngeus Shelf* (Plate I, Fig. 21): Early case. Under chloroform anesthesia, successful recovery with bean forceps through Brunings apparatus.

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Plate V—Fig. 1. Inspiration. Fig. 2. Expiration. No signs of obstructive emphysema.

Plate V—Fig. 3. Fluoroscopy of pork chop bone in esophagus being negative. A barium-soaked pledge of cotton revealing presence of some foreign body. Method of Frank H. Wilson, England.

Plate V—Fig. 4. X-ray of suspected chicken bone in esophagus negative. Fluoroscopy, using a barium filled capsule (No. 3 rectal) showed the stoppage of capsule at superior aperture.

Plate V—Fig. 5. Woman patient in severe dyspnea. X-rays were negative. Bronchoscopy revealed no foreign body. However, from cricopharyngeus small piece of cartilage removed, which does not explain her dyspnea. Patient made complete recovery. Above X-ray shows stoppage of barium filled capsule some time after removal of foreign body.

Plate V—Fig. 6. Shows barium filled capsule stopping in esophagus (quarter lateral position). Emphysema occurred during a quiet, normal esophagoscopy. Unquestionably due to a brittle esophagus, due to cancer. Post-mortem refused.

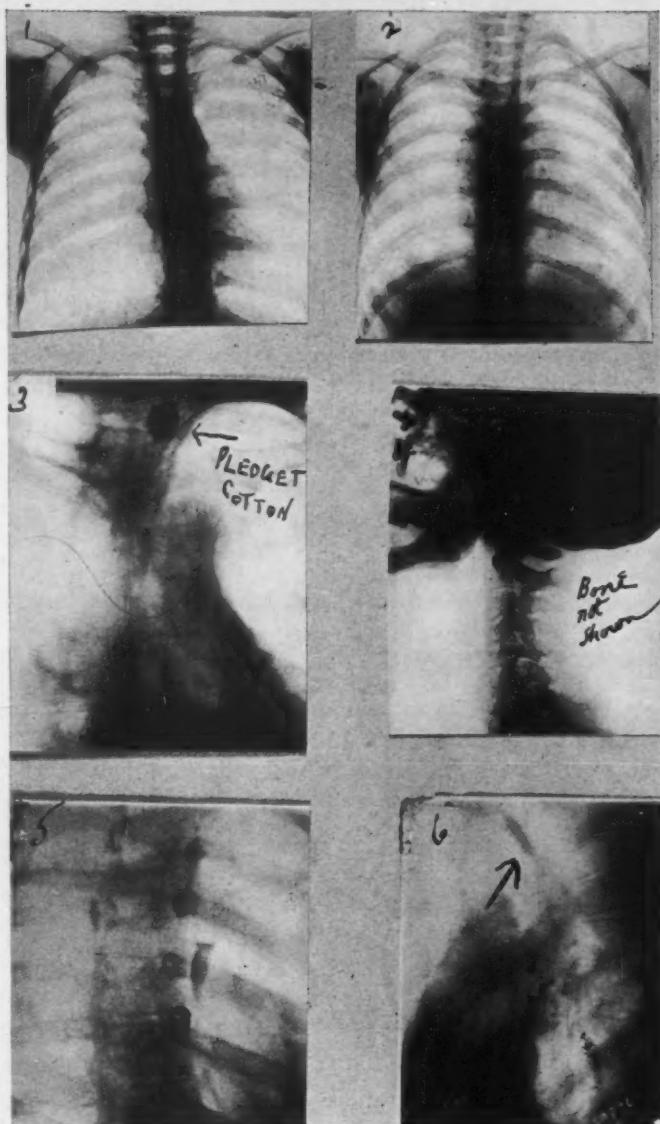


Plate V.



*Case 40. Penny in Cricopharyngeus Shelf* (Plate IV, Fig. 8): Three-year-old child. Early case. Chloroform anesthesia. X-rays showed overriding of foreign body and considerable edema. Brunings tubular esophageal speculum was employed. The Brunings forceps remained in esophagus and was removed by the consultant. The penny was removed.

*Comment:* The use of anesthesia releases the spasm of the cricopharyngeus, and very frequently the slightest touch will propel the coin forward.

*Case 41. Soup Bone in the Left Lung* (Plate I, Fig. 23; Plate IV, Fig. 4): Fifty-four-year-old woman, while eating soup had an initial coughing spell. Up to the time of the bronchoscopy, no great amount of discomfort was noticed by patient. X-ray plate shows an unusual form of obstructive emphysema (Iglauer-Manges sign).

No physical signs were present beyond slight lagging left chest on inspiration, and some rales posteriorly, and hyper-resonance on left lateral side of chest (by Dr. Solon Cameron).

By means of bronchoscope, introduced under gas anesthesia, bone found impacted in left main bronchus, surrounded by coagulated blood; 9 m.m. bronchoscope and small fenestrated peanut forceps were employed.

*Comment:* The foreign body which gives a negative X-ray picture is a potential death producer, although usually slow in its work. Bones will seldom show except by such inferential methods as above described.

*Case 42. Black Walnut Shell in Lung* (Plate I, Fig. 18; Plate V, Figs. 1 and 2): A 7-year-old girl, week prior to bronchoscopy, had slight choking spell while holding part of black walnut in mouth. There were occasional paroxysms of coughing, but at time of hospital admittance nothing was noticed except a slight inspiratory stridor, barely discernible except by listening at the open mouth. X-ray plates taken at end of inspiration and expiration did not bring out obstructive emphysema.

The child was prepared with  $\frac{1}{6}$ -gr. of morphin, during which, however, the inspiratory difficulty seemed to be aggravated. The laryngoscope showed the larynx to be congested, and upon each cough a dark body could be seen moving in the left bronchus. The body was removed by the smallest mosquito forceps in 45 seconds, through a 5 m.m. bronchoscope. However, the administration of oxygen was necessary during the operation.

*Case 43. Impacted Chicken Bone in Cricopharyngeus Shelf* (Plate I, Fig. 24): The patient was a 16-year-old boy, in whom the X-rays

failed to show a foreign body. However, barium meal suggested foreign body. Under chloroform anesthesia, the chicken bone was removed through Brunings instruments.

*Comment:* In a case of this sort, the use of barium soaked cotton will in all probability show the presence of a foreign body.

*Case 44. Frog Bone in the Esophagus* (Plate I, Fig. 27): An adult woman with negative X-ray findings. A capsule of barium soaked cotton not used. Anesthesia. Foreign body removed at the third esophagoscopy.

*Case 45. Impacted Chicken Bone in the Esophagus* (Plate I, Fig. 30): An early case of an adult woman with negative X-ray findings. Foreign body removed under chloroform anesthesia. Kahler-Leiter apparatus, 25 minutes.

*Case 46. Pork Chop Bone in the Cricopharyngeus Shelf* (Plate I, Fig. 25; Plate V, Fig. 3): In an adult woman, something stuck in her throat while she was eating, causing her to become cyanotic. Swelling appeared in the anterior portion of the neck, which was mistaken for goiter by physician in attendance. The bone did not show under the X-rays with the introduction of a barium soaked piece of cotton in the cricopharyngeus shelf. Under local anesthesia, removal was affected, although there was considerable spasm.

*Comment:* The relief of the spasm above the foreign body in the esophagus has resulted on two occasions by the liberal application of cocaine. One case was a second esophagoscopy under profound ether.

*Case 47. Chicken Bone in the Esophagus. Dr. U. S. Short's Case* (Plate I, Fig. 28; Plate V, Fig. 4): Adult man was choked by a chicken bone. Although X-ray picture was negative, a capsule filled with barium was stopped at the superior aperture. Under local anesthesia the bone was removed by side grasper through 10 m.m. esophagoscope.

*Case 48. Soup Bone in the Air Passages "?"* (Plate I, Fig. 26; Plate V, Fig. 5): An attack of dyspnea occurred while the patient was eating soup. He was cyanotic when he arrived in the receiving room. The patient pointed to the trachea as the point of greatest pain. Radiologist reported esophagus negative. Search of the lungs was negative, although both lungs were found reddened. Foreign body was found in the cricopharyngeus shelf.

*Comment:* There was a small amount of bone in the esophagus which could not explain the dyspnea. The question was whether or not it was originally in the trachea.

*Case 49. Pork Chop Bone in the Esophagus. Dr. U. S. Short's Case* (Plate V, Fig. 6): An adult man was choked on a piece of

pork chop bone. X-ray findings negative. The bismuth capsule definitely stopped in superior aperture. The piece of meat was removed by Dr. Short, after ballooning and cocainization of upper esophagus by writer. The food passages were clear and the patient appeared entirely revived. Second introduction was undertaken because of the uncertainty of having removed the spicule of bone. During the examination of the thoracic portion of the esophagus, a shelving edge could be seen on the upper rim. While inspecting this area, without movement of the scope, the patient suddenly jumped, and immediately he became emphysematous on both sides of the neck as far as the temporal regions. Death.

The patient had said that the metallic touch of the scope on tooth had caused him to have a shock. Local anesthesia; 10 m.m. esophagoscope with ballooning attachment.

*Comment:* No autopsy permitted. Cancer of the esophagus most likely caused brittleness of the food passages. In a recent case, where a patient flinched on account of the contact of the scope with an amalgam filling, a piece of dry gauze remedied situation.

*Case 50. Sparerib Bone in the Esophagus (Early Case) (Plate I, Fig. 12):* A young boy experienced pain in the sternum on swallowing. X-ray findings negative. Barium capsule not used. Under chloroform anesthesia the bone was removed with Brunings apparatus from the thoracic portion of the esophagus, where it was transfixed.

*Case 51. Pork Chop Bone in the Esophagus (Plate I, Fig. 29; Plate IV, Figs. 6 and 7):* Adult woman complained of pain in the center of trachea, just at superior aperture. Tucker's sign doubtful. Barium meal was suggestive of coating. Barium capsule showed foreign body at superior aperture. Fig. 39 shows the futility of an anterior posterior picture. Patient was given  $\frac{3}{8}$ -gr. of morphin and put to bed with a view of operating the next morning. She expelled the intruder herself by morning. Recovery.

*Comment:* The use of morphin while awaiting tubing has permitted two patients to relieve themselves of foreign bodies.

## UNUSUAL LODGMENT OF HAIRPIN IN ESOPHAGUS OF INFANT.

DR. M. C. MYERSON, New York City.

This report deals with the case of a baby age 12 weeks, weighing 9½ pounds, who swallowed a hairpin of comparatively large size. The pin was 2½ inches long. The practical point of interest is that, contrary to rule and expectation, the open ends of the pin were downward.

An older brother had pushed the pin into the baby's mouth and it disappeared. At first the baby was cyanosed. A few seconds later,

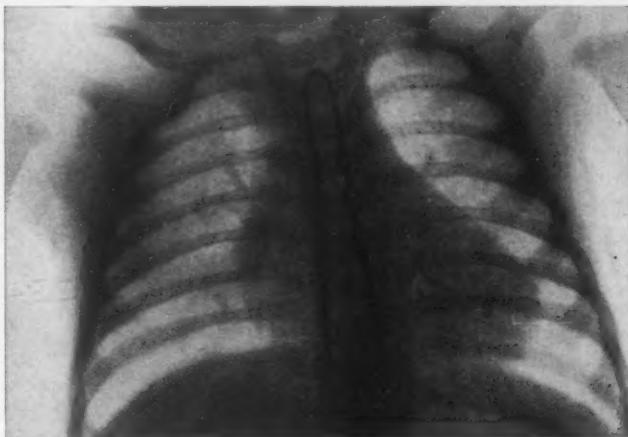


Fig. 1. Front. Anteroposterior view.

when the hairpin had passed downward, the infant was again comfortable.

Removal was accomplished by means of a small Jackson laryngoscope and a Yankauer grasping forceps. Because of the fortunate type of placement in this case, no problem presented and the intruder was removed in a few seconds.

30 East 40th Street.

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## A CASE OF ADVANCED BILATERAL MASTOIDITIS WITH VERY SLIGHT MIDDLE EAR EVIDENCE.\*

DR. ALBERT L. USSETT, Chester, Pa.

The mastoid cavity is probably involved to a greater or lesser degree in every case of acute purulent otitis media, but ordinarily 60 to 75 per cent of all mastoid cases clear up without any surgical interference, providing we establish proper drainage by paracentesis. We find, however, a group of cases where the mastoid inflammation increases in spite of all treatment we may give to the middle ear, and it is this group of cases that cause the otologist a great deal of anxiety and worry. If we are dealing with a typical case of acute mastoiditis the diagnosis is comparatively easy. By a typical case I have in mind a patient who gives a history of an acute purulent otitis media, followed by a swelling over the mastoid region, associated with pain, which is worst at night. There is also present insomnia, tenderness over antrum and the tip of the mastoid region, drooping or bulging of the posterior superior canal wall, profuse discharge and general constitutional symptoms. The following case is reported because of its atypical behavior and absence of many of the cardinal symptoms of acute mastoiditis.

Mr. J. H. C., age 38 years, referred to me by Dr. Eynon on May 16, 1927. *History:* About two months before consulting me he was treated by his family physician for an attack of influenza, following which he developed occasional attacks of otalgia in the left ear. The pain gradually increased and for the last few weeks became quite severe on several occasions. He slept well, had a good appetite, and was able to work daily. His past history was unimportant.

*Examination:* Examination of the left ear showed the tympanic membrane slightly congested, especially over the handle of the malleus. There was no bulging. The mastoid was swollen and there was tenderness over the antrum and the tip. The right ear appeared normal. The nose did not show any pathology. The tonsils were small and apparently diseased. The faucial pillars appeared red and injected. May 23, one week later, the appearance of the tympanic membrane was about the same, but I noticed a distinct fluctuating mass over the mastoid region, with considerable tenderness over the

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entire mastoid. An X-ray by Dr. Sharpe on May 28 showed "the left mastoid consisting of large cells with trabeculations well defined. The antrum and periantral cells showed varying degrees of density, the other cells appeared clear. There was also a suspicion of a perforation through the tip. The right mastoid appeared normal."

The following week the pain became more severe, especially at night, and the swelling over the mastoid was quite large. His temperature and pulse were always normal. June 6 he complained of insomnia for past four days and considerable pain, and though the tympanic membrane did not show anything unusual, with the exception of a slight redness over the malleus handle, I advised him to enter the hospital and I operated on him the following day, June 7.

*Blood Examination:* W. B. C., 13,800; polys., 69 per cent; lymph., 26 per cent; monon., 4 per cent; bas., 1 per cent. Urinalysis showed a faint trace of albumin.

*Operation:* Following the usual mastoid incision a large quantity of pus exuded from the soft tissues. The tissues were very edematous; after elevating the periosteum I noticed a very small amount of granulation tissue about the size of a match head on the cortex below the spine of Henle and upon removing same I found the probe sinking through a perforation into the mastoid cavity. The mastoid cavity was excavated from the perforation to the tip and above to the spine of Henle. The entire cavity was found filled with pus and necrotic material. All diseased cells were removed. The aditus was not located, though the cavity was excavated to a sufficient depth. A small drain was inserted and the wound closed with three sutures. Paracentesis of left membrana tympani was done prior to exploration of the mastoid. A culture taken from the mastoid cavity showed a pure pneumococcus. Following the operation he continued to improve rapidly and was discharged from the hospital 11 days later. June 20, 13 days following the operation, the left membrana tympani appeared normal and the mastoid wound was completely closed. On June 25 he returned to the office complaining of pain in the right ear. Examination of the right ear showed the membrana tympani slightly inflamed and some bulging over the posterior half. There was slight tenderness over the mastoid and it certainly suggested the possibility of a mastoiditis on the right side. June 28, membrana tympani reddened but not bulging, still tender over the mastoid, slept all night. June 29, paracentesis of right ear showed only a few drops of blood. July 1, condition about the same, incision of drum closed. The following week the swelling over the right mastoid increased, tenderness became more marked and the pain more fre-

quent. July 8 he entered the hospital and an X-ray taken by Dr. Sharpe showed all cells cloudy and destruction of some cells.

*Blood Examination:* R. B. C., 4,370,000; W. B. C., 10,700; polys., 66 per cent; lymph., 20 per cent; large lymph., 11 per cent; eosin, 2 per cent; monon., 1 per cent. Urine, negative.

July 11, I operated on him for right mastoiditis. *Operation:* Tissues edematous, usual mastoid incision, moderate amount of pus removed from soft tissues. Periosteum stripped easily. Perforation in cortex about a half-inch above the tip of the mastoid, covered with granulation tissue, same as on the left side. This perforation was larger than the left. The entire mastoid cavity was filled with necrotic material. The bone was very soft from the perforation to the tip. The aditus ad antrum was located and filled with necrotic material. Pathologically this side was far more advanced than the left. Most of the cells were removed and the entire mastoid cavity cleaned. A small drain was placed in the aditus and along the floor of the cavity, wound closed with two sutures. Following the operation he improved rapidly and was able to leave the hospital 10 days later, and was discharged cured on July 30, 19 days after the operation.

*Comment:* This case is interesting for several reasons: First, absence of changes in the membrana tympani and middle ear, due probably to the fact that the infection passed through the middle ear abruptly and settled in the mastoid cavity. Second, absence of pain and constitutional symptoms. Third, the presence of a cortical perforation on both sides, which is common in children, but rather rare in adults.

328 E. Broad Street.

## SLUDER'S BOOK AND BYRD'S THEORY OF PATHOLOGICAL CURRENTS—A SUP- PLEMENTARY RELATIONSHIP.

DR. W. B. HOPKINS, Tampa.

Dr. Sluder has brought out a revision of his former book under the new title "Nasal Neurology, Headaches and Eye Disorders". It is a remarkable contribution to medicine in the volume of painstaking work that it bespeaks, in the amount of clinical material of an unusual nature that he has assembled, and in the fact that that material is such that all previous knowledge is totally inadequate to explain or harmonize it. It is a clear demonstration that our previous theories concerning nerve behavior must be materially changed to harmonize with these new facts, or else a new one invoked.

A critique of this book of 428 pages would of necessity be very voluminous, and so will not be attempted. But since Chapter VII deals particularly with the interpretations of the material contained in the volume, and referred to in the bibliography, this discussion will be limited to that chapter, with the privilege of drawing on similar material, from whatever source. This chapter, consisting of 32 pages, is a report of the various and sundry symptoms that have been intercepted by the author and others, together with failures. A brief mention of these will enable the reader to get a better grasp of what it is all about. Some 24 years ago Dr. Sluder found that cocaineizing the nasal ganglion would arrest what he has called "lower half" headaches. Some of the additional symptoms that he and others have since intercepted by cocaineizing the one or the other nasal ganglion are as follows:

Pain in cheek, both pain and tenderness; pain in eye—iritis, conjunctivitis, keratitis, glaucoma, etc.; pain in ear—otitis extrema, otitis media, and itching; pain behind ear; pain in throat—both pain and sense of tightness; peritonsillar abscess, diphtheria, pain of post-tonsillectomy, etc.; pain about angle of jaw; glossodynia; burning of tongue; external cricodynia; pain in ear, associated with cancer of larynx; herpes above brow; herpes in ear; pain in shoulders, arms, fingers, joints, muscles, back, legs, toes, chest, trunk, etc.; pain of surgical hand; pain in uterus and ovaries; pain in uterus due to cancer; pain in sarcoma above clavicle; ovaritis; sciatica; hiccough;

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hay fever; asthma; false angina; lumbago, etc., etc.; diarrhea; St. Vitus dance; ringing in ears; sense of blurring of eyes.

Now, the fact that these and other symptoms all over the body have been repeatedly intercepted at the nasal ganglia, viewed from all previous knowledge, is as unexpected as it is inexplicable. And what makes the puzzle more complete, Byrd has shown that in one case, as sciatica for example, the symptoms can be intercepted in one instance by cocainizing the nasal ganglion of the same side; in another not through the same side, but the opposite; while in a third, the symptoms cannot be intercepted at either. So there is little wonder that Sluder vents his despair in language like the following: "The control, through the nasal ganglion, of pain which is apparently irrelevant to it, seems to me explicable only by means of the involuntary system that at present is incomprehensible." And again: "Comprehension of the mechanism of control of pain in one branch of a nerve by anesthesia of another branch at rest, is beyond my powers of comprehension."

It is unfortunate that Sluder did not have an adequate grasp of Byrd's theory of "pathological currents" when the book was written. That he did not is shown by the fact that he interprets that theory as inapplicable to motor phenomena, and as denying the pain of trauma, both of which betray a misunderstanding of the theory itself. As I say, it is unfortunate, for the writer believes that if he had had an adequate understanding of this, the book would have been far different. Instead of the disheartening task of piling up seemingly unrelated facts impossible of explanation, he would have had the delightful experience of articulating this material into a theory that at least serves as a working hypothesis, and which will doubtless continue as a working hypothesis till greater refinements of our knowledge modify it and whip it into its final form. With the aid of the theory of pathological currents every fact so far as the writer has been able to determine, reported in Sluder's book, marches up in orderly array, and takes its place without apology. But before making any of the applications, it is well to state briefly just what the theory of pathological currents is.

The theory of pathological currents, as proposed by the author, Dr. Byrd, is simple in the extreme. Briefly stated, in my own language, it is about as follows: Beginning with, let us say, a focus of infection, and assuming that it acts like a battery, it is easily seen how it would charge all nerves connected with the lesions. And whenever the charge reaches a certain tension, it will break through the insulation at some place, on the circuit (it might be remote from the battery), thus forming a spark gap. It is this spark, at the spark-

gap, at the locus where the charge "shorts" that sets off the trouble. The particular kind of trouble thus set up does not depend upon the location of the battery—whether tooth, tonsil, sinus, gall bladder—but upon the location of the spark gap. If the spark-gap be located say in the sciatic nerve, we have sciatica; if in a joint, we call it arthritis; if in the breathing mechanism, we call it asthma, and so on.

The experimental evidence of this rests upon the ability to turn off the switch between the battery and the spark-gap. Supposing, for illustration, we have an infected maxillary sinus that is causing arthritis in the knee. The theory of pathological currents postulates that there is a current emanating from the maxillary sinus, along the nerves, via the nasal ganglion of the same side, and charging the nerves to the knee, where it is shorting, and setting up the trouble. The proof of this rests upon the ability to cocaineize the nerve, anywhere between the sinus and the knee and arrest the pain. The nasal ganglion is a convenient place to thus cocaineize the nerve.

Indeed, according to the theory, the nasal ganglion functions as a sort of switchboard through which currents pass, and the whole experimental evidence rests upon the arrest of symptoms by intercepting the exciting currents, going or coming, for it works either way, through the nasal ganglion.

With this interpretation, it will be seen that the theory of *pathological currents* actually reverses the nerve current as ordinarily interpreted. Instead of the nerve current merely setting from the locus of distress to the brain, and reporting on the trouble, *it actually sets toward the locus of distress*, and *causes* the trouble, itself coming from some remote battery, the existence of which may not even be suspected.

This interpretation of nasal phenomena, seen in action, is as dazzling as it is unexpected. If the theory be sound, then it would require that any symptom in any part of the body, as trunk or extremities, due to current that is coming from some focus in the nasal bloc, whether in sinus, upper tooth, tonsil or turbinate, be interceptible at the nasal ganglion, where the provoking current passes through the switchboard. And this is exactly what happens. Again, any symptom within the nasal bloc, due to some incoming current through the switchboard, should be interceptible at the nasal ganglion. And this, too, comes true to expectancy.

Without going further into the theory, the reader is referred to the writings of Dr. Byrd, the author, for fuller statements. The point of this article is that the theory of pathological currents seems entirely adequate to explain the bizarre phenomena of Sluder's book. With that theory well in hand, the reader will have no difficulty in

reducing this array of mystifying facts to law and order. With that theory, one will see at a glance, how the interception of pain, and other phenomena, is accomplished by turning off the switch at the nasal ganglia; how the interception succeeds every time the current is routed from the battery to the locus of distress via the ganglion; how such interception must fail whenever the exciting current is routed other than via the ganglion in question; how the interception of the current at the left ganglion, but not the right, could control the pain of cancer of the uterus, the battery being located in the left nasal bloc; how it controls asthma, in one instance on the right side, in another on the left, and in a third not at all, all depending upon the locus of the battery that is furnishing the current. It explains how motor phenomena are controlled, even as sensory, since a pathological current registers in motor nerves even as sensory; and how chorea (Byrd) could thus be temporarily intercepted by cocaineizing the left nasal ganglion, but not the right, the battery being in the left side, and permanently relieved by injecting the ganglion with alcohol. It explains how ear-pain and ear-cough can be controlled through turning off the switch at the nasal ganglion, *always* when, and *only* when the exciting pathological current is routed to the ear via the nasal ganglion. It explains how diarrhea can be intercepted at the nasal ganglion, always when, and only when the exciting current is routed that way. Above all, it offers, for the first time an explanation of so-called "referred" pains or "projected" pains as they are sometimes called, and which as ordinarily used mean merely a pain that is some distance removed from where it is supposed to originate. A good instance, cited by Sluder, is pain in the ear, associated with a pathology of the larynx (Clerf). It is a common enough phenomenon, and we have spoken of it as "referred" pain till we have ceased to wonder at the mechanism by which such pain is, or can be "referred". The theory of pathological currents postulates that the pathology in question acts as a pathological battery, from which the nerves connected with it becomes overcharged to the point of "shorting" at some more or less remote locus. From which it is seen that the theory doesn't modify in the least the conception of "referred" pain, but it does make it intelligible.

In conclusion, the writer would point out that Sluder's book, together with Byrd's theory of pathological currents, should be inseparable companions in every medical library—not of the head specialist, but of every man who aspires to think straight, and to practice scientific medicine, for the prediction is offered that this will be the pivot of all medical thought for the next generation.

205 Zack Street.

## LEECHES AS FOREIGN BODIES IN THE UPPER AIR PASSAGES IN PALESTINE.

DR. M. SALZBERGER, Jerusalem.

The occurrence of leeches in the upper air passages as well as in the upper part of the alimentary canal is mentioned in every manual of laryngology and in all textbooks on tropical diseases. The treatment of this subject, therefore, seems to me justified, particularly since there have been very few cases reported from Palestine. In this connection I shall attempt a short review of the literature dealing with this subject.

Chiari<sup>1</sup> in his manual merely mentions the occurrence of leeches without enlarging upon the subject. Schroedter<sup>2</sup> quotes Clementi, Massi and other authors who have described similar cases. Bruck<sup>3</sup> merely mentions them without entering into details. Most interesting is the report of Moritz Schmidt<sup>4</sup> to the effect that Halyabbas (994 A.D., Persia) has observed leeches in the upper air passages and has advised their removal by means of forceps. Manson<sup>5</sup> mentions their occurrence in the south of Europe and north Africa; he also mentions that cases were observed in Palestine and Egypt during the war. Castellani and Chalmers,<sup>6</sup> also Mense,<sup>7</sup> render a minute description of the leech and refer mostly to the work of Masterman. Braun-Seifert's textbook, "Die tierischen Parasiten des Menschen",<sup>18</sup> is in veritas a composition of the collective works on this subject, citing no less than 72 publications and about 250 cases. Of this number at least 112 cases were reported by one man, Galleges, at the third Spanish Otological Congress in 1910. These cases comprised 84 occurrences in the pharynx, 20 in the nasopharynx, and 9 in the trachea. Tonietti (Giornal de Medizin. milit., Sept., 1912) treated 19 cases during the Tripolis expedition, of which 12 occurred in the nasopharynx and 5 in the larynx; and Gaggia, of the Lybia expedition (Giornal de med. milit., 1914, p. 298) describes 20 cases (2 in the nasopharynx and 18 in the larynx). Also, M. I. Briggs reports two cases in Palestine (Brit. Med. Journal, 9/III, 1918). Of special interest is the case of Blaudin, where it terminated in suffocation as well as the case of Dumany, where a leech necessitated a tracheotomy. The cases mentioned in this textbook are classified according

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to the localization, as follows: 104 cases in the pharynx, 79 cases in the larynx, 25 cases in the nasopharynx, 15 cases in the trachea, 11 cases in the space beneath the vocal cords, and 6 in the nose.

To my knowledge Masterman<sup>8</sup> was the first to note occurrences in Palestine in 1908, Briggs in 1918, and Schermann,<sup>9</sup> of Jaffa, described some cases in 1922. Leeches reach the upper air passages generally with the drinking water, as all authors mention, or during inspiration while bathing. The fashion in which the natives drink water facilitates the swallowing of the leech. They either drink from a narrow necked earthen jar by placing their lips directly on the brim of the jar, or, as the more enlightened ones do, by drinking from a jar with an elongated spout. This spout is kept at a certain distance from the mouth and only the stream of water reaches the mouth. Thus the next drinker may safely do so without fear of infection. From time to time they swallow the accumulated water in the mouth without closing their lips. This requires a dexterity only to be attained by long practice. It stands to reason that this manner of drinking does not help to detect the presence of leeches in the water, and consequently the drinker cannot avoid swallowing them with the water. Once swallowed, the leech generally reaches the stomach, where it can do no harm. Sometimes, however, it finds an attachment on the way, and then follow the symptoms and sufferings, so well known to the natives; generally they come to the physician with the correct diagnosis. In the interests of symptomatology it is but fair to state that the symptoms consist of headache, lassitude, anxiety, and the cardinal symptom, constant light hemorrhage. The blood may be discharged from the nose, pharynx or nasopharynx through choking, or it may be discharged from the larynx and trachea through coughing and retching. Hemorrhages of lengthy duration may result in serious anemia; in two cases described by Masterman the anemiae were even fatal. It is as yet unexplained why the leech remains so long in the upper air passages or alimentary tract without leaving at once on his own initiative (Masterman). The local symptoms differ according to the position in which the foreign body attaches itself. In some cases there is marked difficulty in nasal breathing, while others show nasal speech, bulbar swallowing and otherwise difficulty in swallowing. In cases where the larynx and trachea are affected, there is hoarseness, stridulous breathing, to the point of asphyxia. The occurrence of the leech as a foreign body in the upper air passages and alimentary tract should by now be quite familiar to the people of Palestine. Any amount of home remedies are enumerated (gargling with salt solution, or the remains of tobac-

co in the pipe, or the smelling of sharp things, etc.), as well as numerous instruments for their mechanical removal. Masterman mentions the sharp twigs of the cedar, and in one special case the use of a large sack-needle. Imanuel Loev<sup>10</sup> in his book, "Die Flora der Juden", states that the botanist Hareubeini<sup>11</sup> was the first to expound the use of the plant *caparis spinosa*. I am extremely grateful to Mr. Mareubeini for pointing out to me the places in Jerusalem where these plants grow. We saw them in both the fresh and withered condition on old walls. Figs. 1 and 2 show both conditions of the plant. The twigs show a formation of clawlike thorns, built fairly strong and bent downwards. The natives choose a strong twig, cut or break off all thorns except one, and thus improvise an instrument consisting of a handle with a hook at one end. This instrument



Fig. 1



Fig. 2

can easily be inserted into the mouth and pharynx, and, as I have been assured, even into the esophagus without the slightest injury. The leech is hooked on to the instrument and relaxes his hold in the moment of hooking. He is thus drawn out as a fish on a hook. These statements were verified by my inquiries amongst the natives.

These numerous home remedies explain why so few cases reach the European physician; only after failure of all the home remedies. Still fewer cases reach the specialist. This then clears up the reason why we do not read of the exact position of the leech in all the numerous publications on this subject. Everywhere we find only general statements, but nowhere do we find attempts at their removal by means of modern laryngological instruments. Masterman complains of the same existing fact.

Harting<sup>12</sup> describes three cases that he had seen during the war amongst the Turks in the Balkans. All three patients had been drinking of the same pool, and in all three cases the leech had been arrested on the glottis and was lying on the vocal cords. They were grasped with the forceps and the patients, while choking, assisted in bringing them up. Masterman, during his stay in Palestine, had seen about three dozen cases, and still, even he gives us nothing definite about the position of the leech. On the other hand, he gives us an accurate symptomatology and, above all, he is the only one of the authors to point out a new and simple method of removing the leech without the use of complicated instruments and without danger of choking. This method, which he has learned from Mackinnon in Damascus, consists of dipping some cotton in a 30 per cent solution of cocaine, and painting the leech with it. Then the patient is placed in such a position that the paralyzed leech may drop out. As it takes the cocaine solution a few minutes to take effect, it leaves ample time to maneuver the patient into the right position. Masterman states that this method had never failed him. I would recommend this method to all who are not equipped with the proper instrument, or who dread the possibility of choking. Zografides,<sup>13</sup> who did not take into account the effect of cocaine on the leech, had to contend with a case of choking. However, with the aid of tracheoscopy he was able to get over this embarrassing development. His subsequent remark that the removal from the trachea was easy is easily comprehensible. Evidently he dealt with the removal of a leech already paralyzed by cocaine, which formed no attachment anywhere.

Scherman warns generally against the use of cocaine, and traces all cases of choking to the faulty application of cocaine. He goes still further and challenges the presence of the leech in the trachea, on the ground that it has no "raison d'être" there. I must agree with Scherman when he advises caution, but I cannot accept his second statement, for it is highly possible that at the moment of swallowing, if a deep inspiration is taken, the leech would surely be directed into the trachea. But in the application of cocaine, if you follow all the precautions prescribed by Masterman, the danger is reduced to a minimum. Tapia,<sup>14</sup> Alagva (Palermo)<sup>15</sup> and Goyanos<sup>16</sup> had occasion to examine cases of, and to extract leeches from the bronchi. These cases, as well as those referred to in Braun-Seifert, as far as I know, were not treated with cocaine. The two cases that Belinoff<sup>17</sup> exhibited at the meeting of G. D. H. U. and Ohrenaerzte in Breslau, 1924, show quite clearly that the careless manipulation of cocaine caused choking, and tracheotomy had to be resorted to. Although cases of leeches in the esophagus are very rare, still in countries where

leeches frequently occur as foreign bodies this possibility must always be kept in mind. I once had a case referred to me, accompanied with the diagnosis, leech in the esophagus, but the esophagoscopy showed a negative result.

The cases that I had occasion to see in Palestine add nothing to our knowledge on the subject. Still I shall describe a few that are nevertheless interesting for various reasons.

*Case 1:* In 1922, I was consulted by a man, age 26 years, giving following history: a week before while working in filthy water he slipped into a deep pit, causing him to swallow some water involuntarily. Since then he continually feels a drawing pain in the throat, constantly coughs, and with the cough continually brings up blood. He consulted several physicians and they held that the coughing with blood was due to a hemoptoe, and treated him accordingly. It was accidentally that he came under my care. The examination of the time showed as follows: Blood stripes coming from the recessus pyriformis, a swelling of plum-blue color on the laryngeal surface of the epiglottis, merging into the left recessus pyriformis. I was as yet unfamiliar with the occurrence of leeches in Palestine, and therefore thought of a blood tumor. I wanted to obtain a specimen of the tumor by means of a laryngeal curette, in order to examine it properly histologically. I therefore anesthetized the region with Ephraim's solution and went in with the double curette (Schroedter), removing the entire tumor without further difficulties. Imagine my surprise, as well as the patient's who also was an European, when the tumor turned out to be a leech swelled with blood. The patient presented himself on the following day entirely cured.

*Case 2:* As well as the following all come from a village called Liftah, which is situated about 5 kilometers from Jerusalem. The patients arrive with a correct diagnosis. This patient, a woman, has had the leech in her throat for eight days, all home remedies being futile. The examination showed a large, half-rounded, oblong-formed tumor lying on the right arytenoid cartilage and disappearing in the right recessus pyriformis. Both the color and the bleeding confirm the diagnosis of the patient. After anesthetizing with the Ephraim solution, the removal was performed quite easily.

*Case 3:* This case complained of expectorating with blood for four days, the blood coming from the upper portion of the oral cavity; so alleges the patient. In addition his speech has a peculiar sound and in swallowing the liquid generally came through the nose. The examination showed a blood stripe in the pharynx coming from the nasopharynx. The uvula appeared thickened, and with the help of a posterior rhinoscopy, we could discern a longish purple tumor on the

choanal side of the uvula. Based on our former experiences, we easily recognized the leech and removed it without difficulty.

*Case 4:* A peasant woman claims to have a leech in the throat for eight days, and all house remedies so far have failed. Coughing blood, a marked hoarseness, a clearly stridulous sound at breathing and an accompanying knocking sound were easily discerned. An examination of the larynx disclosed a leech, whose head and three-fourths of the body lay in the space beneath the vocal cords, and whose other fourth lay directly on the vocal cords. Thus it would disappear with every inhalation and reappear with every exhalation. Due to the danger of choking, we attempted to extract the leech without cocaine, a process most unsuccessful, since the patient was extremely afraid and nervous. The method of Masterman-Mackinnon was unknown to me at the time, and I therefore proposed that the patient enter the hospital, where we could effect the extraction either through block or general anesthesia. To my regret the patient did not accept my proposal. I later learned that the patient forced out the leech by keeping in her mouth some very fatty cheese.

Of the four aforementioned cases, two were in the recessus pyriformis, one on the uvula, and one in the space beneath the vocal cords.

Of these four cases, two were treated with a weak cocaine solution without, however, the leech relaxing its hold. Obviously there was no danger of choking in either of these cases. In the last case the leech left promptly. Notwithstanding that the application of cocaine in the first two cases was absolutely harmless, I still would not advise its use where the slightest possibility of choking exists.

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## A NOTE ON DIPHTHERIA IN A PUBLIC SCHOOL.\*

DR. WILLIAM HARTZ, Philadelphia.

Diphtheria has been studied from all angles and many monographs and papers have been written about its prevalence in epidemic form in private day schools, boarding schools, institutions and homes, wherein are permanently housed large numbers of children.

From the data accumulated in these papers an abundance of statistics is available, and the method of procedure relative to quarantine, care and cure of cases already infected is well established along approved lines.

An order is issued and the building is placed under quarantine. Children who are ill are removed to a contagious disease hospital or are isolated in their home. The other children receive immunizing doses of antitoxin, and visitors are excluded until the epidemic is over and the last case of diphtheria has recovered.

But, in public schools this routine cannot be followed. The children who attend the school come from a radius of many squares, and supervision with resulting restriction is difficult, and, if tried, is very ineffectual, especially if the school is situated in a neighborhood where there are large colonies of foreign-born people who still cling to their alien manners and customs, notwithstanding the many years they have lived in this country.

I visit various schools in which there are always some few cases of contagious diseases during the course of the school year. These are routinely followed up and ordinarily the spread of contagious diseases is held down to a minimum.

One of these schools is new, and draws its pupils from a neighborhood where most of the houses are the modern, two-story type, and in which live a mixed population, with a preponderance of the native American working man. One-third of the total number are children of poor, ignorant Italians who strongly adhere to their European customs and whose homes comprise a foreign colony spread over a few streets in the proximity of the school. The remainder of the children belong to better class people, who have discarded their mixed racial characteristics and have become Americanized.

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From the opening day of school to the commencement of the Christmas holidays, 32 cases of diphtheria were reported in the school; two in September, one in October, 20 in November, and nine in December, 1926. In January and February, 1927, there were three cases each month.

For September and October, the percentage was about normal and a routine procedure was followed. If the actual case was in school within three days from the date the school was notified by the Bureau of Health, the other children in that classroom were hastily examined, especially for symptoms of coryza and sore throat, and the nose and throat of every child there was cultured and the class was sent home for about two days until the report on the cultures came back from the laboratory. Usually, two or three children in the class showed positive cultures and were further excluded until two consecutive negative cultures were returned.

At this point, I wish to digress to state that a campaign was instituted in May, 1926, to help eradicate diphtheria. Permission was asked of parents to allow their children to receive free inoculations of three doses of toxin antitoxin, seven days apart. The responses were 60 per cent or over in most schools. In this particular school less than 40 per cent of the children received three injections by June, 1926.

Notwithstanding routine precautions there were 20 actual cases in November and nine in December, 1926. This was assuming the proportions of an epidemic and more stringent measures were instituted by Dr. Walter S. Cornell, Supervisor of Medical Inspection of Public Schools.

Cultures were taken of the throat and nose of every child and teacher from the kindergarten to the fourth grade, inclusive. It was a huge undertaking to examine and culture 800 children, and considerable time was spent to finish the task, but the end justified the means.

I also examined all children who were absent on account of illness and cultured those who complained of sore throat, and they were excluded until reports on the cultures were returned.

In the basement there was a lunchroom for the children where sandwiches, cakes and hot drinks were served by three women attendants, two being mother and daughter, and both of these had children attending the school.

Early in November the school received notice that a child of one of these helpers had diphtheria. On questioning the mother, she informed us that the child had been sick for four days with a sore

throat and under her care, while she continued with her duties in the lunchroom.

The mother was sent home, and her daughter, whose child also attended this school, took her place. At this juncture, the mother, daughter and helper were cultured and the lunchroom was closed indefinitely. An extra woman who had only worked one hour in this room showed a positive culture later. Some days later, the daughter's child also developed diphtheria.

The co-operation of the principal and office staff was splendid. Meetings were held and the situation was discussed with the teachers. Groups in assemblies were prohibited, classrooms were thoroughly aired, and floors and desks were washed with disinfectant solutions.

All suspicious illnesses and rumors about cases of diphtheria not reported to the Bureau of Health were investigated. Following these meetings, a large number of children were sent to me daily by the teachers. Most of them were malingerers, eager to get away from classroom work, and with the hope of being sent home. Quite a few children who were away on account of sore throats were cultured later and sent home until a report came back. One Italian boy was attending school with a sore throat; I diagnosed this case as pharyngeal diphtheria and a culture that I made later proved to be positive. This boy was in the classroom, in contact with other children for two or three days, spreading the disease before he was discovered. In this particular classroom one child died of diphtheria in October, and there were three other actual cases in the last week of November. Cultures of the children and teacher of this room were taken twice within two weeks and the findings were as follows: There were eleven positive cultures and the teacher was also positive. As a result this room was closed until after the Christmas holidays.

#### COMMENTS.

Of the 33 actual cases of diphtheria, only six had received three injections of toxin antitoxin a little less than six months previous to the development of diphtheria. Two cases contracted diphtheria after the last T. A. injection three months previously.

Allowing a minimum period of at least six months to develop immunization, about 20 per cent of the total number of actual cases were those who received three inoculations. The two children who died of the disease were never inoculated.

*Actual cases according to ages:* 6 years, 7 cases; 7 years, 9 cases; 8 years, 4 cases; 9 years, 7 cases; 10 years, 0 cases; 11 years, 0 cases; 12 years, 2 cases; 13 years, 3 cases; 14 years, 1 case.

Of the total number of 37 cases, there were 14 children of Italian parentage, or about 40 per cent, 16 girls and 21 boys. Thirty-one children were excluded as contact cases, where the actual cases were children of pre-school age or others who did not attend school. Of these, 27 were Italian children, and three of these contacts later developed diphtheria.

Of the total number of children cultured, 50 were positive. Only one teacher showed a positive culture, and it was negative on later cultures, and this in the room where there was an ambulatory case of diphtheria which I excluded. Most of the positive cultures were between the ages of 6 and 9 years.

I am certain that there were many cases which were never seen by physicians, either through ignorance of the actual condition or through fear of prolonged quarantine. I can cite a couple of instances—one child returned to school after Christmas. He had been away about six weeks for illness, which was supposed to be grippe and tonsillitis. Another parent phoned the school that she was advised by this boy's mother to keep her children from visiting him as his physician thought it might be a case of diphtheria. When this boy returned to school he was weak, anemic, his speech was slurred, and he had difficulty in swallowing. He stated that his doctor had treated him for sore throat, and did not take a culture nor report the case as diphtheria, but that he had given him large doses of antitoxin and then kept him in bed for weeks because his heart was affected, his throat paralyzed, and because of anemia.

Another parent phoned to the school that late one night her next door neighbor wanted to use her phone to call a physician to see her child, who had been ill with a sore throat for a few days. The doctor came that night, recognized diphtheria, but it was too late. The child died the next day. This was another case of diphtheria, of a few days' duration, not recognized by the parent, and seen too late by the physician. Some cases of diphtheria were treated at home, secretly. In others, physicians were not called because of ignorance of the condition, poverty in the home, and fear of quarantine.

Other cases had received large doses of antitoxin and were not cultured nor reported to the bureau of health and were not quarantined and so the disease was more readily disseminated.

Other children, though perfectly healthy, were probably carriers, when brothers or sisters were actual cases of diphtheria, and which were not reported nor treated as such.

5559 Spruce Street.

## PRIMARY JUGULAR BULB THROMBOSIS. REPORT OF CASE.

DR. J. COLEMAN SCAL, New York City.

Primary bulb thrombosis is the term applied to a formation of an infected thrombus in the dome of the jugular bulb. This is the initial stage and site of the lesion, the lateral and sigmoid sinuses are not involved. The cause, as given by Dr. Kopetzky, is usually a dehiscence in the floor of the tympanic cavity which permits a direct contact between the jugular dome of the bulb and the floor of the middle ear. In these cases even a mild middle ear infection may attack the wall of the jugular dome and may result in a primary bulb thrombosis. Another plausible cause (Boenninghaun) is the extension of a purulent infection from the internal auditory veins to the jugular.

This condition may exist without the presence of a surgical mastoid and often the middle ear condition is so slight it is overlooked and at the time of the examination found to have cleared up entirely. In fact, Dabney claims that an infection may pass through the middle ear without setting up any inflammation.

Case M. S., age 9 years, school boy. Admitted to Gouverneur Hospital, July 8, 1926, under service of Dr. Waldie, with the diagnosis of possible typhoid or influenza.

*Past History:* Measles seven months ago, otherwise negative.

*Present History:* This boy had been very ill for the week prior to his admission to the hospital. He had high fever, several chills and vomited during the past two days. Temperature on admission was 104°.

*General Examination:* July 8, showed a fairly well nourished boy apparently not acutely ill. Scalp negative. Eyes normal. No nystagmus or strabismus present. Pupils react to light and accommodation. Mouth and teeth normal. Throat shows tonsils enlarged, red and inflamed. Throat cultures taken July 9, 1926, were negative for Klebs-Loeffler bacilli. Cultures taken from pus in tonsils showed presence of staphylococci with occasional streptococci and some pneumococci present. Tongue coated thickly and of a dirty whitish color. Nose negative, except for blood crusts present, due to a recent nose-bleed. Neck showed no rigidity. Slight adenopathy was present.

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Heart and lungs normal. Abdomen, genitals and extremities normal. Bowels alternately constipated and loose.

*Otoscopic Examination:* July 9, 1926, patient complained of pain in left ear. The left ear canal was dry. The tympanic membrane showed landmarks disturbed, the color was red around its margins, and the center was dull and opaque. No fullness or bulging present. On July 10, 1926, the entire drum was red, with some slight fullness at lower posterior quadrant.

Due to the acute pain and fullness at lower quadrant of this ear a myringotomy was performed and found negative. A very slight serous discharge was noticed later. A smear and culture taken from the discharge showed staphylococci predominating, with some streptococci present. The tympanic incision closed and three days later examination failed to disclose any further change in landmarks. There was no deafness present. There was still some slight pain present behind the ear, especially marked over the middle of the mastoid process.

A Widal was negative. The Von Pirquet test was negative. X-rays of the chest were negative. A second throat culture for Klebs-Loeffler bacilli was negative. The left ear continued to discharge a serous fluid for two days after paracentesis, and mastoid tenderness was still present above the tip. The patient continued his high septic temperature, which fluctuated from 101° to 105°. He now felt acutely ill and vomited several times. A tentative diagnosis of bronchopneumonia or typhoid was made. A blood culture taken July 12 was negative. The discharge in the left ear had ceased, the drum appearing flat and not pulsating. There was no sagging of the roof canal. A mastoidectomy was advised by Drs. Waldie, B. Schwartz and Russel, and the case transferred to the Otolaryngological Department. Blood cultures taken after twenty-four, forty-eight and seventy-two hour-intervals were sterile. Another smear taken from the ear discharges showed presence of a short chain streptococcus and staphylococcus.

Examination of left ear, July 15, 1926, showed a small perforation of the previous paracentesis at posterior inferior quadrant, which bled on touch. The central part of the drum was assuming its pearly color while the margin was still red. There was no bulging present. The mastoid tenderness still existed.

A spinal tap showed clear fluid with a cytology of 40, albumin +—, globulin +, glucose +++, Fehlings. Another Widal and blood culture were negative. A blood count taken July 10, showed R. B. C. 4,410,000, with hemoglobin 75 per cent. The glands of the

neck were not enlarged over the jugular vein. Repeated blood counts showed continued diminution of the R. B. C. and decrease in hemoglobin. The blood count taken July 16, 1926, showed R. B. C. 3,360,000, with hemoglobin 45 per cent. In view of the diminishing R. B. C. and decrease in hemoglobin shown in repeated blood counts, an exploration of the mastoid was decided upon.

A simple mastoidectomy was performed, but all cells found normal. There was no destruction around the antrum. The lateral sinus was exposed for about three-quarters of an inch and found to be of normal color, lustre and consistency. Normal pulsation was observed. The sinus was not opened and the mastoid cavity was lightly packed and closed in the usual way.

The septic symptoms continued after the mastoidectomy and the following day the blood culture was positive. The culture showed a streptococcus hemolyticus in both plate and in broth, and the smear of both cultures showed a short chain streptococcus.

A diagnosis of primary jugular bulb thrombosis was made, the case presenting the classical symptoms of systemic bacterial invasion.

The patient was prepared for operation on July 21, 1926. The jugular vein was easily located, ligated below the facial branch and resected for about an inch and a quarter and drained below. The vein was found thickened and somewhat boggy above the facial branch. The mastoid was re-entered and the Voss operation for exposure of the jugular bulb performed. The sinus was then re-inspected and further exposed to its lowest limit, where after removing a narrow layer of bone the posterior wall of the bulb was exposed in the roof of the jugular fossa. Small plugs of iodoform gauze were inserted between the bone and sinus walls, so that the lumen of the vessel was shut off. The bulb was then incised. The jugular bulb was cleared of thrombotic septic material and free pus released. After free bleeding was obtained from the torcular end, the plug was reinserted. The mastoid and sinus cavities were lightly packed; the wound not being disturbed for five days. Then the packing was gradually removed from the mastoid wound and the sinus plug gradually loosened and removed after the seventh day.

The smears and cultures taken of the specimen removed from the left jugular vein showed a short chain streptococcus hemolyticus. A blood count taken July 22, 1926, showed R. B. C. 3,600,000 with hemoglobin 45 per cent.

Following the operation the temperature dropped to 101° fluctuating around 100° until the third day, after a small superficial skin

infection of the right axilla following hypodermoclysis was incised, when it commenced descending, reaching normal on the sixth day. On July 23, 1926, the third day after operation, a slight left-sided facial paralysis was noted. A blood count taken July 26, 1926, shows the R. B. C. 4,100,000 with hemoglobin 55 per cent.

The wounds, both at the neck and over mastoid regions healed uneventfully, the patient being out of bed Aug. 9, 1926. He was kept under observation at the hospital for two more weeks and discharged Aug. 20, 1926. The slight left-sided facial paralysis improved considerably, so that it was almost unnoticeable until the child was asked to laugh or whistle.

#### COMMENT.

In this case, the beginning symptoms were marked by the profound sepsis as well as by the absence of any mastoid signs. A simple mastoidectomy performed was negative and the sinus exposed to the knee found not thrombosed. The diagnosis of primary bulb thrombosis was made immediately after, by the positive blood culture showing the streptococcus hemolyticus as well as the continued septic symptoms, combined with the blood picture; showing the continued reduction in the hemoglobin and the R. B. C. After the bulb was cleansed of septic material, improvement commenced at once and was followed by complete cure. The facial involvement was not traumatic, as it came on three days after the operation, thus showing it was inflammatory, and gradually improved.

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44 West 74th Street.

## DEMONSTRATION OF SPECIMENS OF THE SPHENOPALATINE-GASSERIAN GANGLION.\*

Dr. JULIUS I. KLEPPER, New York City.

The sphenopalatine ganglion was first described by the German anatomist, Johann Friedrich Meckel, born in Weltzlar, July 31, 1714. He studied at Gottingen, where he received his degree of Doctor of Medicine on presentation of his inaugural dissertation, "De Quento pari Nervorum," in which the sphenopalatine ganglion and the submaxillary ganglion were first described; in 1749 another treatise on the sphenopalatine ganglion was published in French. Meckel later became professor of anatomy, botany and obstetrics in Berlin, and also became the new teacher in the newly-established school for midwives at the Charité Hospital. He made a special study of the fifth and seventh nerves, wrote a good many papers, including some studies on dilatation of the heart. He died September, 1774. A son of his by the same name made a study of the ear labyrinth. Many of the descendants were great anatomists in Germany.

G. Sapolini, of the Royal Court of Italy, in a letter written to a friend in 1871, through seventeen dissections finds, grossly speaking, the same as his predecessors, with the exception that he adds the junction of the seventh and ninth pairs, gives the sphenopalatine ganglion mobility, tactile, and gustatory sensibility, and the carotid branch adding vegetative action to the ganglion.

In 1910, Muller and Dahl in a treatise on the sympathetic nerves of the head emphasized the difficulty of demonstrating the sphenopalatine ganglion anatomically and histologically in man. From their studies of this ganglion they concluded that it belonged purely to the sympathetic nervous system, and had no motor or sensory fibres, which is almost true, with some exceptions.

It has always been our practice to include a description of the sphenopalatine ganglion in teaching the cranial nerves and their relation to the nose and throat, but it was not until Dr. Sluder's articles, starting in 1908, and later especially when his book on headaches appeared that the importance of this ganglion in naso-

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pharyngeal condition, its connection with the eye, ear, and different forms of neuralgias and headaches, or even with more remote organs was realized. With the works of Sluder, this ganglion began to receive more attention in America than elsewhere. His symptomatology is definite, and even men like Cushing acknowledge it.

*Description of the Sphenopalatine Ganglion (specimens shown):* The sphenopalatine ganglion is irregular in shape, apex down, about 1 c.m. in length,  $\frac{1}{2}$  c.m. in width, and  $\frac{1}{2}$  c.m. broad; it is situated in the upper part of the sphenomaxillary fossa, in the connective tissue that contains the branches of the internal maxillary artery with its descending posterior palatine branches—it is suspended from the superior maxillary nerve, before this nerve passes to the sphenomaxillary fissure by two, three, very rarely one branch, as you may see in the specimens, slanting slightly laterally outwards in back of the posterior dental nerve and the tuberosity of the maxillary, postero externally the pterygoid plate, above the body and the greater wing of the sphenoid. Internally the mucous membrane and areolar tissue fill in the space between it and the nose outside of the sphenopalatine foramen. The branches of the internal maxillary artery are in close relation to it.

The sphenopalatine ganglion is, therefore, in close relation to the posterior ethmoid cells, the lateral wall of the nose, and posteriorly in relation to the sphenoid sinus, if that sinus extends forward far enough; therefore it is subject to many diseases which may involve these structures by contiguity or continuity of tissue. The foramen is situated in the lateral wall of the nose, just above and posterior to the posterior tip of the middle turbinate. The ganglion is made up of stellate cells, similar to the sympathetic cells in other ganglia. The next very important contribution as seen in the specimen, comes from the Vidian nerve.

The Vidian nerve is formed by two branches: the large superficial petrosal nerve, which comes from the facial, and carrying fibres coming from the nucleus salivatoris, or pars-intermedia, or glandular secretory fibres, and also some motor fibres from the facial. This branch goes superficially over the petrous portion of the temporal bone to the cartilaginous portion of the middle lacerated foramen, where it joins a branch of the carotid plexus of the sympathetic, or the large deep petrosal nerve, forming the Vidian nerve—as you see in the specimen, quite a good size nerve going through the Vidian canal, under the sphenoid sinus, and is subject to the thickness of the sinus wall. This Vidian nerve carries also motor fibres and supplies the nasopharynx, the levator palati, and the Eustachian tube.

1. The sensory roots of the sphenopalatine ganglion are those derived from the sphenopalatine branch of the maxillary nerve; they run posteriorly to the ganglion, a few fibres from the ganglion enter its formation, coming out as a triple branch carrying sensory, motor and sympathetic branches to the soft and hard palate.

2. The motor root through the facial and pars-intermedia; this part comes from a group of cells situated in the medulla in the reticular nucleus formation dorsomedially of the facial nucleus, from there it goes through the geniculate ganglion, then through the large superficial petrosal nerve and under the Gasserian ganglion to the anterior lacerated foramen, where it joins the large deep petrosal nerve, forming the Vidian nerve; part of its fibres come from the facial nerve, adding therefore motor fibres to the nerve.

3. The sympathetic, or the large deep petrosal nerve coming from the carotid plexus through the internal carotid canal of the internal carotid artery, is in turn the upper extension of the superior cervical sympathetic ganglion. Some of the cells are probably located ventrolaterally of the horns of the upper thoracic spinal nerves.

The sphenopalatine branches of the maxillary are mostly sensory, passing by Meckel's ganglion to form the anterior, middle and posterior descending palatine nerves, which supply sensory branches to the nasopharynx, soft palate, pillars and tonsils, by way of the anterior descending palatine, it also supplies the gums, the soft and hard palate. The motor fibres in them supply the levatori palati and azygos uvuli muscles.

The other branches that go to the ganglion are those from the tympanic plexus, by way of the small, deep petrosal nerve which connects with the otic ganglion, and then to the sphenopalatine ganglion. The ganglion being so constituted, contains, therefore, motor, sensory, sympathetic and excito glandular fibres.

1. The branches are, as already stated before, the anterior descending palatine going through the posterior palatine canal, and emerging through the posterior palatine foramen, one-half inch to the inside, and in front of the last molar tooth in a direction from above downwards, forwards and slightly inwards—easily entered with a straight needle through the mouth. The oral surgeons have used this method of injection for a long time. The middle and posterior descending palatine nerves already described as going to the nasopharynx, soft palate, the pillars, tonsils, the lower posterior part of the inferior meatus, and partly the floor of the antrum. The tonsillar branch is very small and is of no great account in anes-

thesis of this structure, but joins the pharyngeal plexus to supply the tonsils.

2. The branch going up through the sphenomaxillary fossa, or orbital branch, supplies the periosteum of the orbit. The orbital muscle of Muller at the sphenomaxillary fissure and involuntary muscle of the upper lid, the outer wall of the ethmoid cells through the osplanum and uniting with the branches of the nasal and lachrymal of the ophthalmic division of the fifth nerve, brings the sphenopalatine ganglion's connection with the eye.

3. The sphenopalatine nasal branches are those of the lateral wall of the nose supplying the superior, and part of the middle posterior part of the meatus, also the nasopalatine, which runs diagonally across the septum to the incisor teeth, supplying the septum and incisor teeth, joining the anterior descending palatine, and completing the circuit through the foramina of Scarpa.

4. A separate branch goes through the pterygopalatine canal to the posterior and upper part of the vault of pharynx, and supplying the nasopharyngeal wall and the neighborhood of the Eustachian tube.

*Connection with Different Organs:* From the large superficial petrosal nerve the ganglion gets motor, excito glandular and sensory branches; the motor part comes from the motor part of the facial, and the sensory comes from the geniculate ganglion by way of the pars-intermedia of Wristsberg, which is also excito-glandular, except that it may take on some fibres from the geniculate ganglion. The large, deep petrosal nerve is a branch of the carotid plexus of the sympathetic, therefore a part of the chain coming through the cervical ganglion and particularly the superior cervical sympathetic ganglion. This ganglion has connection with the lower cervical ganglia. The first, second and third dorsal going to the stellate ganglion, therefore we understand the connection of the branches going to the heart and the lungs.

The large superficial petrosal nerve receives a branch from the tympanic plexus lying over the promontory, by way of the small, deep petrosal nerve and, therefore, we see a connection through this nerve and the tympanic plexus with Jacobson's nerve and also the vagus, as both go in to form this plexus over the promontory in the middle ear. A branch from the otic ganglion also joins the Vidian nerve, which brings the sphenopalatine ganglion in relation with the otic ganglion, from the otic ganglion a branch goes over to the chorda tympani; this opens a new avenue to the tongue, by way of the chorda tympani.

24 W. 85th Street.

## ACUTE OCCULT MASTOIDITIS AT TEN WEEKS.\*

DR. HARRY B. SILVER, Newark, N. J.

E. W., age 10 weeks, male, white. *Family History:* Father and mother alive and well. Grandparents on both sides alive and well. First child, no miscarriages. Instrumental delivery after a protracted labor. Child apparently normal, color good, no convulsions or asphyxia. Took to the breast and nursed well.

*Past History:* Birth-weight, 7 pounds, 12 ounces. Breast-fed for the first six weeks, then put on an artificial feeding on account of vomiting and failure to gain. In the week before the onset of the illness the child had gained 11 ounces and weighed 9 pounds, 13 ounces. The vomiting had markedly decreased and the child looked and acted much better. Physical examination at this time, eight days before its death, revealed no abnormalities.

*Present Illness:* Child had a cold with a slight hoarseness, nasal discharge and no temperature; nasal discharge stopped after two days and child appeared perfectly well. Was taking its feedings nicely and was bright and comfortable. On the morning of the onset of the illness child took its 6 a. m. feeding as usual and appeared normal. At 8 o'clock it was noticed that the child had its head drawn back, eyes rolled upward and was moaning. It was also markedly cyanotic. Child then vomited some white mucus and later some bile-stained mucus. It was brought to the hospital with a temperature of 108°, cyanotic and having convulsive twitchings. Died four hours after admission.

*Physical Examination:* White male, age 10 weeks, acutely ill, cyanotic, with labored breathing and a marked rattle. Temperature 108°, respiration 40. Anterior fontanel sunken, posterior open. Face: Alae nasa widely dilated, eyeballs sunken. Eyes: Dilated and fixed on admission, later reacting normally. Ears: Light reflex not seen both ears. Both drums slightly dull, no bulging or redness. Mouth: Normal. Throat: Normal. Lungs: Flatness over left upper

\*Read before the Beth Israel Hospital Clinical Society, Nov. 2, 1927.

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posterior. Coarse bubbling rales throughout both lungs. Heart: Apex beat neither seen or felt. Sounds inaudible, due to pulmonary bronchi and rales. Abdomen: Normal. Extremities: Normal. Reflexes: No abnormal reflexes noted.

*Autopsy Findings:* Fairly well nourished child, age 10 weeks, somewhat dehydrated, with fair musculature. Skin normal except for postmortem changes. No free fluid in the abdomen. Transverse colon distended and shows some increase in lymphoid markings. Intestinal tract otherwise normal. Chest normal in shape. No fluid or adhesions in the pleural cavities. Numerous fine hemorrhages were present under the viseral pleura. The pericardium was free and normal except for numerous pin point hemorrhages similar to those in the pleura. The thymus showed a moderate enlargement. The large blood vessels were all normal. The larynx and trachea were normal and showed no inflammation. The brain was very soft and edematous. There was no inflammatory reaction in the dura or the meninges. The superficial blood vessels were markedly engorged. There was no evidence of any hemorrhage or hydrocephalus.

The mastoid on the right was broken into and was normal. The left mastoid was normal in appearance from the inside of the skull but when opened showed that it was full of thick, green pus. No culture was made but examination of a direct smear showed a field of solid pus cells, with many long chain streptococci.

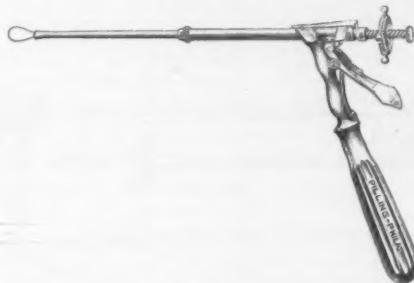
The interest in this case lies in the sudden onset and death, with the presence of acute purulent mastoiditis, in a very young child, without anything in the physical findings to suggest it.

33 Milford Avenue.

## PISTOL TONSIL SNARE.\*

DR. PHILIP S. STOUT, Philadelphia.

About 18 years ago while looking about for some instrument which would assist in the complete removal of tonsils, I happened to come across Wright's Nasal Snare. Although this instrument was made for nasal work it was fairly satisfactory for tonsil work and from that time until about two years ago I did practically all my local tonsillectomies with that snare. It was the most satisfactory instrument I have ever had and I have used it a great many times; however, it was made for nasal work therefore, the barrel was a little short for tonsil work, and it had only one adjustment for drawing up the loop of wire. This instrument that I am presenting to you is one



which is a modification of Wright's Nasal Snare, in that it is longer in the barrel and has coarse and fine adjustments similar to that found on a microscope. I need not go into the advantages of drawing the loop of wire together very slowly as a preventative of hemorrhage. This is especially true in drawing tight the last quarter of an inch of the loop. In the aged, in persons suffering with high blood pressure or arteriosclerosis, the bleeding can be much lessened if the tonsillectomy is done by very slowly drawing together the loop of wire. In this way the vessels are torn rather than cut and the bleeding, in my experience at least, has been less. I need not go into the advantage of the pistol pattern of snare, as we all know that if our hands are out of the way we can see better.

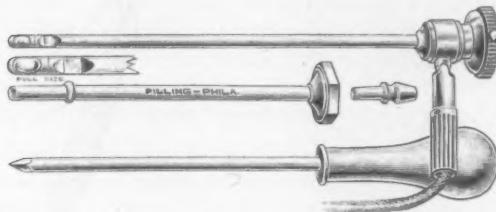
Medical Arts Building.

\*Presented before the Philadelphia Laryngological Society, Nov. 1, 1927.

## ANTRASCOPE.\*

DR. PHILIP S. STOUT, Philadelphia.

Nearly every physician has patients in whom he is in a quandary as to whether or not there is any pathology of the antra of Highmore. For years we have had a method of looking into cavities, such as the nares, posterior nares, larynx, etc., but it is only recently that we have had an instrument with which we can see clearly into the antra of Highmore. This instrument, which I am showing you, I think will be an improvement on the original instrument. With the original we found some difficulty at times in placing it in the antra; this new instrument has a safety element, in that the collar is



placed so that the trocar and cannula will not go in too deep. In other words, an attempt has been made to make it as nearly "fool proof" as possible. It is a very convenient instrument and, using it with due care, since any instrumentation of the antra is not without danger, it becomes a valuable adjunct to your armamentarium. It is not difficult to see polyps, polypoid degeneration, pus, etc. The only disagreeable feature I have encountered was one case that developed erysipelas following its use; other than that I have had no unpleasant after-effects. Its parts consist of trocar and cannula, with fitting for washing antra, and the scope.

Medical Arts Building.

\*Presented before the Philadelphia Laryngological Society, Nov. 1, 1927.

## THE NEW YORK ACADEMY OF MEDICINE.

### SECTION ON OTOTOLOGY.

*Regular Meeting, Oct. 14, 1927.*

DR. R. T. ATKINS, *Chairman*: Distinguished Guests, Ladies and Gentlemen, Members of the New York League for the Hard of Hearing: It is with great pleasure that the Otological Section of the Academy of Medicine welcomes you here tonight. We deem it a great honor to assist in the inauguration of "Better Hearing Week".

We are also delighted with this opportunity of becoming better acquainted with your organization and trust this will be the beginning of a closer affiliation of the two societies.

You have accomplished much in your short existence as an organization, and the Section offers its heartiest congratulations. You have mothered similar societies throughout the country and inspired the establishment of a national society.

Your efforts have brought happiness to countless individuals whose lives have been marred by impairment of hearing; and now you are looking forward to the problem of preventing the coming generation from undergoing the miseries of deafness. This can only be accomplished by informing the public that deafness, to a certain extent at least, can be prevented. It was with this idea in mind that "Better Hearing Week" originated.

The medical profession is also vitally interested in these problems and it may not be amiss to mention what it is doing to promote "better hearing". The study of the histopathology of the ear is being pursued by laboratory workers throughout the world. Quite recently the American Otological Society began an exhaustive research of the cause of otosclerosis, and already laboratories have been established; material is being collected by all the leading hospitals of the country.

Owing to the extreme difficulty in handling, and the complicated microscopic technique, this work is proceeding slowly, but the difficulties one by one are being overcome.

Patients are being studied with a view of ascertaining the possible connection between metabolic and endocrine disturbances and deafness.

Experimental work has been done on animals to show the effect of noise and trauma on the acoustic labyrinth. These experiments have been the means of preventing deafness among the workers in noisy places.

Mention should also be made of the work just completed by the Commission of Education of your national society in the study of means for detecting impaired hearing in children and giving medical and educational treatment.

A great deal is yet to be accomplished, and there is need for co-operation among all the workers, both lay and professional.

Let us, therefore, strive to make "Better Hearing Week" in New York a great success, so that many others may become interested, and greater efforts may be put forth for the rehabilitation of the deafened; conservation of hearing, and prevention of deafness.

We are very fortunate in having with us tonight several distinguished guests who are interested in this movement, and who very generously responded to an invitation to speak to us.

DR. LOUIS I. HARRIS (Commissioner of Health, New York City): It is a pleasure and a privilege to become associated, even at this late date, with those who have for years toiled to bring home to a great many a problem that has been obscured or totally ignored by the community. I am not competent, nor is it my purpose to indulge in any preaching, but I do desire very strongly to register that from the public health viewpoint it is important that public health officers be roused from their apathy and be made to understand that the question that affects the deafened and the hard of hearing is a very important

one. It is important to those affected from the standpoint of mental satisfaction and of proper adjustment to their work and social environment; it is important from the standpoint of their fitness to carry on in the occupational field; indeed, here it is exceptionally important, for it is to an undetermined degree the cause of industrial and street accidents among those who cannot hear signals in the densely settled sections of this country where automobiles are so common and where many drivers are so careless. For a variety of reasons, therefore, those who are suffering from deafness, partial or total, present a very serious problem, and it has been well said by the presiding officer that one should apply one's self particularly to the problem of prevention.

I tried today, in the few moments in which it was possible for me to give some small degree of attention to this subject, to learn from those in the Department of Health who were in closest contact with children, how many school children were hard of hearing. They hazarded a general guess. I believe that we are not fully aware of the extent to which this condition prevails among the children in the public schools. The figures were too vague to be satisfying. It was said, however, that at least 2 per cent of the children were found to give evidence of very definite imperfection in hearing. I am inclined to believe that that statement does not do full justice to the situation, and I base that judgment on an experience which is not very great, but which had a certain validity. Among the boys and girls in the continuation schools who have been examined by the members of our staff, it was a striking fact that deafness, or hardness of hearing, was evident in quite a large percentage of the children. In the interval between the last examination and the entrance into the continuation schools much might have happened—that is true.

We have not segregated our children who are examined by age groups. It would be helpful if we could know whether among those under 5 years of age only 1 or 1½ per cent are affected; whether between 5 and 10 a higher percentage become affected. Accurate information would help us greatly to determine at what stage of development those causes that operate in childhood become manifest and produce ill results. I greatly wish that such studies could be made. Those of you who represent a much larger group interested in the subject, formally or through sympathy with those affected in one way or another, make me feel an implied challenge to go back and get this information more definitely, and to associate myself with the members of the Otolological Section to receive suggestions as to how best to direct ourselves to the study of this problem, so as to learn how it affects children.

There is about the subject a great appeal, particularly because, as Dr. Cramp, who speaks with great authority, will tell you, charlatans exploit the credulous. There is a pathetic side to this situation, for it is sad how much credulity there is on this subject and how ready sufferers are to accept the promises of any person who, without regard to honor or fundamental decency, claims that the rubbing of a little special oil behind the ears, or other forms of *hocus pocus*, will immediately produce results. Dr. Cramp will tell you about that, for he is the national leader in exposing those parasitic groups who exploit the afflicted and who stand lowest among swindlers, in that they obtain fortunes from the deception of unfortunate sufferers.

I wish that we could make devices for the use of those who are hard of hearing as much the vogue as the wearing of glasses by those who need them. An absurd feeling of vanity restricts their use at present. I know of many persons who are made miserable when they attend the theater and find that actors mumble through their parts so that even those with good hearing lose much that they say. I wish that it were more fashionable to use devices for hearing; we need to make them more popular, to lessen the sensitiveness of those who hesitate to use special devices through dislike of being conspicuous. Of course such devices should be carefully censored to prevent exploitation.

I realize that my function tonight is only to express the view of the public health workers, not only locally but generally, and to signify the interest of that group in preventing deafness; and to say that we will apply with increasing effectiveness and intensity the machinery that we have at our command for the purpose. The note of prevention cannot be stressed too much; and I do expect that in the course of this evening's programme you will be enlightened

as to the methods by which we can attack this problem with greater hope of success.

May I give assurance of this to you who are interested in promoting the scientific side of this subject, and who are able to bring a large measure of happiness to those who are deafened? It is my belief that there is a great deal of promise in the fact that we get together in this fashion—scientists, specialists in the field of otology, members of the medical profession, laymen who are intelligent and who are interested without having a merely personal interest, and public health workers. There ought to be a new impulse given to your work and a new measure of stimulation to what you are doing. I wish you well in this enterprise and promise you that, so far as it lies in my power, I shall pay heed to the admonitions of the specialists and scientists who are the leaders in this work, and during my brief period in the department I shall seek to make a more effective liaison between this Section and the Health Department of the City of New York.

**The Importance of Educating the Public in Regard to the Hearing Problem.** Mrs. Wm. Brown, Meloney.

Officers of the Section, Doctors and Guests: I thought as I came to this building tonight that if any of us should look out of the window and see a child about to receive a blow that might deafen it, we would risk our lives to avert that blow; and yet, this very day and night, all over the country there are blows being dealt to children and to adults, by ignorance and by fakirs, which will hamper their hearing and perhaps handicap them all their lives. All of these fine organizations, these intelligent men and women who have come together to make war on those things which are handicapping the young and the old, carry a great deal of hope.

It is my pleasant task to speak of one agent, comparatively modern in its full usefulness, which has come to the aid of all people who need instruction and intelligent help.

Two generations ago we had in America what were known as press agents, mostly employed to advertise circuses and the stage. But to use the press for public education, for advancing science, for helping the helpless, was to be the crowning virtue of the first twenty-five years of this century. The full virtue of this new field of education came as the result of the World War. No one has ever used it more effectively and honestly, and for greater benefit to humanity than Herbert Hoover. He was the first person in the world to organize this work on a scientific basis and to dignify it with a high standard for service. During the war he used the new agency to collect many millions of dollars for relief work. Later when we entered the World War, publicity became one of our most vital defenses. It organized the sentiment of the mass, it directed the acts of a hundred million people—taught us to serve and save.

The result was that at the end of the war we had a new force with which to deal—publicity. Quick-witted American business men seized upon it. To our national credit, be it said, we used this new weapon for constructive work.

Our most recent example of the power of that new force was the \$12,000,000 contributed by the American people in one week to the flood sufferers. Twelve millions dollars is a great deal of money. Twenty-five years ago you could not have raised that amount in a year.

It is not only in collecting funds and distributing information that publicity should be used. It must serve everyone in this country who, like many of you in this room, feel that you are handicapped. In my own experience in life, which has covered a good many years, I have not met one person doing a big work who did not have some kind of handicap.

Madame Curie had tuberculosis—only one lung. Among the writers, many have not had good health; among the scientists some are deaf and some are blind. Joseph Pulitzer, the editor, could not see. He had to employ someone to do his reading for him.

In Paris I saw a soldier who was painting with an artificial stump of an arm—painting china. So there is no such thing as a hopeless handicap. It is only a matter of intelligent adjustment.

About fifteen years ago I went fishing with my husband in the upper part of New York and met a very charming woman in a little inn. No one knew that

she had a handicap, though they noticed that she sometimes raised her voice in speaking to someone who was hard of hearing. Then one day she went up the lake fishing, and a terrific storm came on. Her family were terrified; for the first time we learned that she was stone-deaf, could not hear thunder and would not know a storm was coming.

That woman had gone to Florence to learn lip-reading, for in this country there was at that time only one place where she might have been given this marvelous training, which will almost overcome what some people call a handicap. Over the country there were thousands of people who needed the information that Mrs. C. had gone to Italy to get. Some of the men in the inn were quite amused at her lip-reading powers and challenged her to tell them what the women at the other end of the table were talking about.

There are 10,000,000 people in the United States who are more or less deaf; 3,000,000 of them are children. There is no real cause for depression, however, if only an intelligent readjustment is made; those of us who are deaf or blind, or have only one lung, have only to readjust our lives, to go on living usefully. Organizations are now growing up in every state which aim to make it possible for every adult and every child to have this training; especially are they trying to get hold of those children who are considered backward because they do not hear what is said, though often they are the most brilliant children in their classes.

The press of this locality is very eager to broadcast the news, and to co-operate with your organization in every way to spread knowledge which will serve the deafened. About two years ago, when Dr. Phillips became president of the American Medical Association, public health took the longest step forward in medical history. Dr. Phillips believes in public health. You cannot have public health without education, and you cannot have full education without publicity.

We have almost wiped out four or five devastating diseases. We have not done it by merely knowing, but by broadcasting and educating, because knowledge is without influence until it is given to the people. It is without power until the people accept it. The only way to accomplish that is to spread the information through all channels. It has to be told over and over again. So we welcome this week, which is to give seven days to telling the helpful things and the important things that can be done to prevent deafness and to help the deafened.

The press is eager to do its part. I am very grateful for having had the opportunity to come here personally and give you this pledge.

**Deafness Cure Quackery and Pseudo-Medicine.** Dr. Arthur J. Cramp (author's abstract).

Quackery is always plausible and credulity is not necessarily a sign of low intelligence. We are all credulous when we wander in strange fields. The number of quacks and faddists who defraud and deceive those who cannot hear, or who hear with difficulty, is large, considering the restricted field in which they work. Most of the practitioners in this line are crude charlatans; a few possibly come within that "twilight zone" of medical practice, where it is difficult to differentiate between the quack with a scheme and the visionary with a theory.

Some deafness cure quacks carry their alleged cures merely as sidelines to other medical fakes. Some sell elaborate but worthless courses of treatment; others dispose of devices that are always valueless and, frequently, dangerous. Still others, physicians of mediocre ability, are itinerants who stay usually not more than 24 hours in one place.

Some time ago a quack at Kansas City, Missouri, exploited an alleged deafness cure through the mails. He had an "electro-magnetic head cap," which was said to revify the nerves, some strychnin tablets, some ear drops containing glycerin and carbolic acid, and a gargle. The postal authorities finally put an end to this business by declaring the thing a fraud and debarring it from the use of the United States mails.

More recently there has been another fraudulent deafness cure exploited from Kansas City. It was known as "Virex", and previously had been called

"Rattlesnake Oil". It, of course, contained no rattlesnake oil. Not that it would make any difference if it had. What it did contain was some oils of eucalyptus and camphor, neatfoot oil, and oil of mustard. The postal authorities got around to this fake and declared it a fraud.

There are on the market a number of so-called artificial ear drums or ear phones. They are both worthless and dangerous. There are also oils that are sold to be applied to the back of the ears, for the purpose of curing deafness. One of these was seized by the government officials on the charge that it was misbranded under the Food and Drugs Act, because the claims were false and fraudulent. The court upheld this charge and ordered the product to be destroyed.

Deafness cure quackery, like all other forms of quackery, will continue to flourish just so long as the public is ignorant of the facts. Again, it must be emphasized that it is not so much a lack of intelligence as a lack of knowledge that makes people credulous. The quack who knows how to word his appeal can gull the intelligentsia as easily as he can convince the illiterate. It was Talleyrand who boiled down the philosophy of the quack: "To succeed in the world it is much more necessary to possess the penetration to discover who is the ignoramus than to discover who is the wise man." The best that the medical profession can do in protecting the public is to turn the light on the methods of the faddist and the quack, so that his ignorance or fraud becomes apparent.

**The Lay Press Co-operation in Public Health Education.** Mr. William H. Neel (Advertising Censor of the New York Times).

Health is one of mankind's greatest blessings. Multitudes, however, have been denied this great boon, and physicians, nurses and hospitals are doing a most beneficent work in their endeavors to better the condition of this great multitude of men, women and children. Their work, however, is chiefly curative or remedial. There is need therefore for an educational work to supplant that done by physicians and hospitals. One of the educational agencies that may be employed, I believe, is the press.

There are many ways in which the press may give its co-operation in this beneficent service. On account, however, of the lateness of the hour and the brief time that has been allotted for my talk, I shall limit what I shall say to only one of the ways in which the press may do this co-operative educational work. One way is by the exercise of an intelligent and careful censorship—refusing to accept advertisements of a curative or remedial character which, after investigation, are found to be questionable, perhaps even misleading or untrue. If all the newspapers in the country would adopt this principle, it would very quickly, I think, bring about a radical change in the attitude of many who have answered advertisements of a character that would lead them to believe they would receive very great benefit.

One thing that would be accomplished by this course of action would be that the readers of the publications, refusing to accept such advertisements, would always remain in ignorance of the remedies or the cures that through other media are being presented to the public.

That, in itself, would be a great gain. But there would be something more than that. The refusal, on the part of the representative newspapers, to accept advertisements of the kind of which I have been speaking would go very far toward discrediting all such advertisements in the minds of the public. That would be a very serious blow to such advertisements, because, when once an advertiser or a product has been effectively discredited, it makes it very difficult for him to advertise that product in such a way as to reach the kind of people that would be necessary to reach if he would have success in the prosecution of his business.

But I think there is still another advantage that, eventually at least, will flow from the exercise of a censorship such as I have in mind, and that is that the ill and suffering public will be driven to consult physicians and surgeons—men who have spent a large part of their lives in studying diseases, in making diagnoses of them, and in treating them. In their contact with these physicians and surgeons, the ill and suffering would be receiving information that would be most helpful and, eventually at least, would be very largely educative also.

Several newspapers have already adopted the policy about which I have spoken. Some have gone so far as to establish a censorship of advertising—not only of remedial or curative products—but advertising of all kinds. Speaking out of my own experience, I may say that I know of at least one newspaper that not only has an advertising censor, but which has also an investigator of questionable advertising, who makes a careful and thoroughgoing investigation of any questionable advertisements that may be offered. On the basis of the knowledge derived from that investigation, the censor decides either to accept or to reject the advertisement that has been offered. In that way very much offensive advertising is at once and permanently eliminated.

But the investigation must be conducted with very great care, in order to be just to all parties concerned; for there is the newspaper, there are its readers, and there is the advertiser. Not only has this newspaper an individual censor who passes initially upon questionable advertising, but it has a Board of Censors. This board is an invaluable aid to the advertising censor. Not infrequently it happens that an investigator will develop facts that are so involved that it would be difficult for any one man to make a decision that would in all probability be just. Under such conditions, the censor has the right to present all the facts that have been developed by the investigator to the Board of Censors, made up of men who are heads of departments, men who are familiar with general business propositions, and who know most of the products that are advertised, and are therefore in position to pass a judgment that is fair.

This Board of Censors performs another valuable function. There are times when the advertising censor may make an adverse decision. He does not at any time undertake to exercise arbitrary power, and is only too ready to say to an advertiser: "You have the right, under the regulations of this paper, to appeal from the advertising censor to the Board of Censorship." That means that the advertiser may come himself, and sometimes attorneys have accompanied advertisers, to lay all the facts with regard to his advertisement before this board, and to present these facts with all the clearness and vigor at their joint command.

In this way the newspaper of which I am speaking does a great deal to protect its readers from advertising that might prove to be misleading, untruthful, disappointing, and even injurious.

I said some moments ago that this censor and this censorship board passed upon advertising of all kinds. It would probably be interesting to you were I to say that special attention has been given by this newspaper and its censorship to hearing devices of all kinds. A careful investigation has been made; first, of all those who have been seeking, as advertisers, to use the advertising columns of this paper. Some of these have been accepted, but even in these instances there has been a disposition to use the superlative and to magnify the value of the device that it is desired to advertise.

It is necessary therefore that constant watch be kept, not only on the character of the advertiser and on the character of the product offered for advertising, but also upon the very text of the advertisement from week to week.

Another effect follows that is most advantageous to the newspaper itself, and that is the cultivation of the readers' confidence. The readers of such a newspaper as I am speaking about come to know that censorship of the most rigid kind is exercised, and exercised intelligently and justly, and that all this is done in the interest of the reader. Consequently the advertisements—whether of hearing devices or of some other nature—are readily accepted by those who have become accustomed to its methods and its policies; and that has resulted not only to the great advantage of the readers of this newspaper but also to the newspaper itself. It has brought about a very high degree of confidence in all departments of advertising, so that it is literally true that, in some departments, more effort is required to keep the undeserving out of its columns than to get the deserving into them. Not only, however, are newspapers of the more reputable and representative kind more and more using censorship in either a lax or a rigid form, but there are other organizations, associated with the newspapers, which are doing the same kind of service for the public. One of these is the Associated Advertising Clubs of the World. Their motto is: "Truth in Advertising," and continual effort has been made by the organization to clear newspapers of unworthy advertising.

Another great organization for enforcing the standards of newspaper advertising is the Better Business Bureau. This is national in character and in scope. Newspapers, therefore, of the better kind, associated advertising clubs all over the country, better business bureaus in all the leading cities of the United States are genuinely working together to prevent advertisers from presenting to you and to others like you advertisements that would mislead and, in the end, be painful disappointments. In the field of advertising, then, the future is full of promise, because the present is full of performance.

MISS ANNETTA W. PECK (League for the Hard of Hearing, New York City): We have prepared a set of slides which are a part of the effort of the Joint Committee on Better Hearing Week, in order to bring information to the public about the prevention of deafness, especially in children. They are going to be shown during next week at the Harlem Health Centre under the auspices of the Health Education Service of the New York Tuberculosis and Health Association, which has also arranged a broadcasting programme for this committee, and also an extensive programme of health talks to be given the coming week at social centres, continuation schools, and settlement houses, on the subject of "Good Hearing and How to Keep It". Up at the Health Centre on 116th street, all sorts of people go back and forth, day and evening, and in the window are various exhibits from time to time dealing with health. The lantern slides will be shown by a mechanical exhibitor in this window; the pictures and information are consequently automatic. The hard of hearing people will appreciate the fine points, and we sincerely hope that they will meet with the approval of the Section on Otology as a means of educating the general public in regard to the importance of hearing.

DR. WENDELL C. PHILLIPS: I hope that those of you in the audience who are using artificial aids can hear my voice. I am not going to make any address at this late hour, and hardly know why I have been called upon, for it is a very complete programme that we have been able to present tonight. I will simply make a few announcements. As a part of this hard of hearing programme, there is being carried out a programme of instruction, a programme which is going into the public schools, and into many parts of the city; and this week will be filled with this kind of work; but I wish to call your attention to the fact that the New York headquarters will be filled with all the paraphernalia, and explanations will be given at any time to those interested.

The final meeting of the hard of hearing, or Better Hearing Week, will be a luncheon at the Commodore Hotel a week from today, and at that luncheon addresses will be given along many lines associated with this work and public health, and an invitation is extended to you to attend. Tables will be wired so that those who are hard of hearing can hear, and you can secure these seats at 126 East 59th street.

This has been a most auspicious opening. It means a great deal to give to the public rich information along the lines of activity. The people who are interested in this work, not only in this marvelous Academy of Medicine, but in the work that is being done along other lines of the League for the Hard of Hearing, which is only a part of the greater organization—the American Federation of Organizations for the Hard of Hearing, and that organization is carrying on this work all over the country. We are doing work for the help of the adults, but more especially for the children in the prevention of deafness in the school child. By the audiometer test, we can examine 40 or 50 children at one time, so that it has become easier to make these tests and find out those who really need help. When I tell you that there are 3,000,000 children of school age who have more or less defective hearing, I am making an extremely conservative statement, and that does not take into consideration the other class of pre-school age. We hope some time to get hold of that group and learn how to prevent the deafened condition that is liable to come on in later life. It was well said by Dr. Harris and Mrs. Meloney that a very large proportion of people have more or less difficulty along the lines of hearing, a difficulty that I myself have to a certain extent, and I find that many other otologists in this country after middle life are more or less deaf, so that we all should join and share in the effort which we are making tonight to overcome this great handicap.

## SECTION ON LARYNGOLOGY AND RHINOLOGY.

October 26, 1927.

**Treatment of Malignant Diseases of the Larynx by Means of Diathermy.**  
Prof. E. Schmiegelow.

(Published in THE LARYNGOSCOPE, December, 1927.)

## DISCUSSION.

DR. C. J. IMPERATORI: It seems rather presumptuous for me to discuss a paper by one who has practiced laryngology for such a length of time, and even discourteous to dissent from what Prof. Schmiegelow has said of his methods.

I think the treatment of cancer of the larynx depends entirely on its location, and I shall confine my remarks entirely to cancer of the larynx and not discuss cancer of the jaw with the treatment by diathermy. If we have a growth located on one cord in the anterior commissure, it would seem that this is the type of growth that may be attacked by laryngofissure or thyrotomy, and then diathermize thoroughly that particular area where the growth is. I should resect entirely the vocal cord and region, including the ventricular band, and then again diathermize the area. In the past year I have had five cases in whom the above procedure was used. Four of them are apparently entirely well—and with no recurrence. One of these five patients was a man, seen in consultation with Dr. MacKenty two years-and-a-half ago, and in whom we decided that the proper operation was thyrotomy. Six months ago he developed a recurrence and he was again operated and diathermy used.

The message that Dr. Schmiegelow gave to me was that in cases of advanced carcinoma of the larynx and in those cases that refuse laryngectomy, the use of diathermy is valuable—how useful remains to be seen. I have probably diathermized these patients too much, for everyone developed a perichondritis, etc., and everyone, some months later, spat out pieces of cartilage. Cartilage, as we all know, is particularly nontolerant to trauma and there is always the liability of getting these perichondritic conditions.

Of course, you all know my ideas on radium. In a series of selected cases at the Manhattan Eye, Ear and Throat Hospital, 53 cases were analyzed. There were 52 recurrences. In these 52 cases, only one has remained cured; that one was a basal cell carcinoma, not squamous cell. It is possible that case was cured not by the use of radium but by the total extirpation at the time of the biopsy.

So I repeat, that the message Dr. Schmiegelow has brought to us is that in inoperable cases, the use of surgical diathermy is useful.

DR. J. E. MACKENTY: When Dr. Hunt asked me to discuss Dr. Schmiegelow's paper on diathermy in the treatment of cancer, I told him that I had had no experience in that method of treatment but would gladly come and learn what Dr. Schmiegelow has taught us tonight. I don't think Dr. Schmiegelow need apologize for his English: I wish I could speak any foreign language as well.

In cancer of the pharynx and tongue, I have had a little experience and I believe, from that limited experience, that diathermy exceeds radium or X-rays in the treatment of these malignant growths. In one case which Dr. Schmiegelow related very carefully the erysipelas, perhaps had something to do with the recession of the malignant growth. Years ago I had a similar experience with a melanotic sarcoma in the groin. After removal, it promptly reappeared in the neck and axilla. The outlook was serious, of course, but about that time the patient developed an infection of the foot, which I did not see but which was reported as being very severe. For five years that melanotic sarcoma remained stationary. The patient seemed healthy in spite of these black masses which could be seen through the skin of the neck and axilla. Then suddenly she developed an acute sickness resembling typhoid, her liver enlarged very rapidly, and in six weeks she died of sarcoma of the liver. I am convinced that the infection of the foot had something to do with the arrest of the sarcoma.

Sarcomas in the old are not so malignant as in the young, and that is why we have better results in older persons.

The question of total resection or diathermy is interesting, and I was glad to hear what Dr. Schmiegelow had to say on that point. Cancers of the pyriform fossa he mentioned as being highly malignant. I have never seen a case cured in this locality, even when surgically removed in the earliest stage. There seems to be something peculiarly malignant about cancer in that part of the larynx.

For the advanced cases of cancer of the larynx, we would welcome any procedure that might supersede surgery. In my opinion, radium has done far more harm than good in this field. I have seen a great deal of it used, and have operated after it was used, to my sorrow, and I cannot say too much in condemnation of the use of radium in squamous cell carcinoma of the larynx. Operation for cancer of the larynx has now become fairly safe; the surgical mortality does not exceed 3 per cent.

In regard to the application of diathermy in the larynx, I do not see why it should not be approached through a thyrotomy, thus making the application more accurate. It seems to me that it must be difficult to be very accurate in so treating cancer in the larynx through the oral route. I have tried splitting the larynx in using radium, as it seemed that it would be an advantage to apply the radium directly with the larynx open. These patients all died of cancer.

Diathermy should be efficacious in cutting off metastasis if this has not already occurred.

I think that X-ray treatment should follow and not precede surgery; I also believe that X-ray treatment following surgery is better than radium. Cancer can often be removed in loco by radium, often in a spectacular way, but it may return with greater malignancy than before in its old situation or in the regional glands. In the eradication of cancer of the larynx or tongue by radium the patients may go on for 18 months and you may consider them cured, but later you too often find a rapidly growing and highly malignant return in the glands of the neck.

From limited observation of electrocoagulation, I believe that it is less frequently followed by metastasis than is radium or X-rays.

Can we ever feel that cancer is truly cured? I believe that it is cured only when the patient dies of some other disease. I don't know where you can place a time limit and say that cancer is cured; it seems to me that it does not exist anywhere. We must therefore be careful in claiming cures for cancer. Diathermy may have a very useful place in late cancer, but surgery must still hold first place in the early cases. Dr. Schmiegelow has been most judicious on presenting his treatment of cases and has given us a masterful resume of the treatment of cancer in our special field.

DR. JOHN K. MCCOV: When I first met Dr. Schmiegelow this evening he told me that he had had only a slight experience with diathermy, but after listening to his paper I conclude his experience has been quite extensive. I began the use of diathermy a few years ago, and last winter I had the temerity to appear before this Section and read a paper on physical therapy as an aid to surgical procedures in the nose and throat. In that paper I recited my results in a number of cases in the nose, throat and larynx. I mentioned in that paper other conditions besides cancer. A condition which had bothered me was that after we had apparently secured a proper opening of the sphenoid, it was some months later closed by cicatrical tissue. I have found that by treating this tissue with diathermy a permanent opening was assured. That was a discovery of some importance to me. Later I had a case very similar to one that Dr. Schmiegelow reports. The patient was a boy about 12 years old, who had a nasofibroangioma. When I first saw him the growth occupied the anterior right side of the nose, the antrum and the entire pharynx. A section was removed and reported to be nasopharyngeal fibroma, not malignant, but the condition has a tendency to recur. The procedure indicated was the Moure operation—removing the anterior portion of the superior maxilla and completely removing the growth. I practically enucleated it and found its origin at the extreme upper portion of the nasopharynx. We cauterized it, and I thought it was cured, but three or four months later the boy returned with a very vascular growth which bled quite freely, and I wondered what should be done. I thought the thermo cautery might do something toward reducing it and tried it, but it was drowned out by the blood. Then I tried diathermy, and

after three applications the growth was entirely eradicated and has not recurred. That was a year-and-a-half ago.

According to his paper, Dr. Schmiegelow has had a large experience in cases of the antrum and around the upper jaw. My experience with carcinoma of the sinuses has led me to believe that radical sinus surgery eradicates the disease better than diathermy. If, however, I had sarcoma to deal with, I would, as Dr. Schmiegelow has done, eradicate it thoroughly with diathermy.

Now in speaking of the larynx, I have compared my results in cancer of the larynx, in cases involving the middle portion of the vocal cord. Where I would formerly do a preliminary tracheotomy without diathermy, I now do a thyrotomy and remove the growth; and in comparing my results they seem to compare favorably with those since I have used diathermy, except in one respect: diathermy makes the process much easier. I proceed directly with the thyrotomy and shut off the bleeding with diathermy, the use of diathermy making the operation easier. The reaction following diathermy seems very slight; I have noticed that particularly in cases of the tonsils, for instance, in bleeders, or patients with long coagulation time. If properly used, there is very little reaction, and patients will tell how little pain they have had.

Dr. Schmiegelow recited a series of cases of old people where they refused operation mostly because of age. That brings us to the classification of carcinoma according to malignancy by Broder into groups 1, 2, 3 or 4. Most persons after 75 with cancer have the type which takes a long time to grow and develop, and I think that type will respond as well to diathermy as to X-ray or radium. In adults of 40 to 45, we see active carcinoma, and where it has spread beyond the midportion of the vocal cord, up or down, the only thing to do—when the patient is strong enough and the cancerous tissue involves the posterior portion of the larynx and is apt to spread into the glands, is laryngectomy.

I have been working in this field for several years, and have been comparing my results with his, and I feel that I have learned a great deal from him.

However, as I have said before, time and again, cancer of the larynx is with us, and we doctors should institute a propaganda telling the public of the danger of hoarseness. If such a propaganda could reach every adult patient with hoarseness, impressing upon them the danger of any such condition that lasts for more than one week, the doctors would see such patients earlier and would get much better results from treatment; but when seen only after six, nine or twelve months, the growth has had a chance to spread into the lymphatics, and the chances of recurrence are very great.

DR. WYETH: I am highly appreciative of the interesting way in which Prof. Schmiegelow has presented this subject tonight. I feel that electro-thermic methods are gradually coming into their own. He has brought out many of their advantages and I agree with everything he has said, except on one or two points of technique.

I wish to correct the opinion which has gone forth tonight that these methods are indicated only in advanced or late cases of malignancy. I feel very strongly that the real indication for them is in the early stage.

One of the greatest advances in the treatment of malignancy that has been made in the last decade is our ability to classify cases according to Broders, into groups 1, 2, 3 and 4, based upon the degree of cell differentiation or degree of malignancy. We now know that groups 1 and 2 are less malignant and more responsive to treatment than groups 3 and 4. It has been brought out that most of the carcinomas of the larynx are of the lower grouping and are generally slow growing.

If I were to have a laryngectomy performed I should undoubtedly want Dr. MacKenty to perform it; but for a beginning carcinoma of the larynx I think he would ask me to pay too high a price (the loss of voice) for the operation which he advocates. I therefore regard this operation, in many cases, as unnecessary as it is mutilating.

I will spend the rest of my time in indicating why I feel as I do about these newer electrothermic methods, and I would especially like to bring out certain points in technique. (Slide.)

This is a reproduction of a piece of meat: on the righthand side you will see how we have been able to so throttle down our current of high voltage and low amperage that we can desiccate or dehydrate a small area the size of a

pinhead. This is the current which has been so extensively worked out by Dr. William L. Clark, of Philadelphia, and which was discovered by Dr. Finley Cook, of New York. It is the one we use in all superficial work where we do not want to penetrate and cause a widespread destruction, and is the one indicated in treating carcinoma of the larynx. It differs entirely from the older current of electrocoagulation or surgical diathermy, which is one of low voltage and high amperage. We never use the plate electrode but always employ a sharp pointed needle. On the left we will see where I have thrust the needle applicator into the meat and turned on 1,000 milliamperes for one-half minute. You will see how the destruction is progressively penetrating and will note that this work is directly under the control of the skilled operator who can produce just as much or just as little destruction as he desires, depending on the amount of current used and the length of time applied.

On the next slide you will see how with the same needle we have applied more current for a longer time and have produced a much greater destruction. When one hears complaint of cases which "spat up chunks of cartilage", as Dr. Imperatori reported here tonight, we know at once the fault was not in the method but in the operator, who was attempting something with which he was not conversant and who had employed one current when another was indicated.

In the middle we have thrust a Paquelin cautery (applicator hot), heated to its utmost and kept going for a half-minute. The effect is a simple burn, with charring at the point of contact, and no penetration. This applicator was next placed cold into the meat and 1,000 milliamperes applied for a half-minute. The widespread destruction about the latter demonstrates the coagulating effect of the current when properly applied.

Our technique in treating carcinoma of the larynx is to employ the third or cutting current to open the larynx anteriorly with a small needle and turn it back, as the leaves of a book. The malignancy is now both visible and palpable and can be destroyed *in situ* without widespread destruction, and removed as dead tissue instead of as viable cells.

I want to again felicitate Prof. Schmiegelow on the work he has presented to us tonight and to congratulate all who have had this opportunity of hearing him.

DR. SIDNEY YANKAUER: The Section owes a debt of gratitude to Dr. Schmiegelow for coming here and bringing before us a subject which has not received the attention that its importance warrants. I myself am guilty of having neglected this procedure to the extent which I have of late learned to regret. The use of electric coagulation gives us a method of procedure which greatly enlarges our field of usefulness and enables us to accomplish results that we could not achieve before. I have been impressed with two features mentioned by Dr. Schmiegelow and others: First, the small amount of reaction which the patient experiences after the use of coagulation. It is astonishing to those who have not seen it what extensive work can be done, both by electric coagulation and by the knife, with very slight reaction on the part of the patient, either local or general. Second, the condition of the scar after the wound has healed—the remarkably small tendency to retraction of the scars after the use of the knife. This tendency to contraction has been especially noticeable in operations of the soft palate. This condition is one which is particularly difficult to operate by the ordinary surgical method, and with the help of the diathermy knife very satisfactory results can be obtained. I wish again to express my appreciation to Dr. Schmiegelow for the many valuable and interesting thoughts which he has suggested.

PROF. SCHMIEGELOW: I have nothing to add to what has been said, but I wish to thank my colleagues who have taken part in the discussion. Dr. MacKenty is quite right that it may be better to use diathermy for the extirpation of cancrum of the vocal cords, especially if it is not a small, limited cancrum in the middle part of the vocal cords. I also think it would be better to destroy the tumor by means of electrocoagulation. I stick to the old excision of the vocal cord because I have had very good results—about 80 per cent. When operating with the knife, you must be sure to cut all away. On the other hand, I never doubt the good results by using electrocoagulation.

I thank my friends for their kind remarks in regard to my address. I am confident that America in taking up the use of electrocoagulation will do a good, scientific and profound work.

## THE PHILADELPHIA LARYNGOLOGICAL SOCIETY.

*Meeting of October 11, 1927.*

### COLLEGE OF PHYSICIANS.

1. Dr. Benjamin Shuster presented a new tonsil suture instrument.
2. Dr. Douglas Macfarlan presented: The Standardized Fork, with an Exhibition of New Light Weight Fork. An Inexpensive Audiometer. A Bone Conduction Receiver.
3. Voice Production—Talk and Cinema. Dr. Robert F. Ridpath.

### DISCUSSION.

DR. ROBERT F. RIDPATH: Dr. Ridpath gave a very splendid and instructive talk on voice production, which he later illustrated with motion pictures. He reviewed the anatomy of the larynx. He spoke of the incomplete tracheal rings (incomplete because of the impingement of the esophagus), the cricoid cartilage, which resembled a signet ring, and the thyroid cartilage, with its strong, shield-like prominence for the protection of the delicate tissues in the larynx. He emphasized the antagonistic action of the intrinsic muscles of the larynx which facilitated the various movements of the vocal cords. Attention was called also to the different function of various fibers of the recurrent laryngeal nerve, and Dr. Ridpath explained that the reason for this was the double cell origin at the floor of the fourth ventricle. The arrangement of the nerve distribution was such that total paralysis of one cord never occurred, because there was always some supply from the other side.

Voice was a noise that could be produced by many animals and was due to vibration of membranes. Speech was articulated voice. Song was speech that depicted emotion. It was putting art into speech. A comparison might be made that song is to speech what walking is to dancing. In the production of speech the larynx, the cords and the resonators were used. The resonators consisted of the sinuses of the larynx, the epiglottis, the pharynx, the buccal cavities, the accessory sinuses of the nose and the tongue. The character of speech varied at different times.

At puberty there was a change. The larynx became enlarged and increased in size until maturity occurred. Early maturity caused the larynx to cease its growth; the vocal cords therefore remaining small. The voices resultant to this process were the more feminine types, as the tenor in the male and the soprano in the female. In late maturity the larynx continues its growth. The cords became larger and stronger, and as a consequence we had the more masculine voices, the baritone and bass in the male, and the contralto and alto in the female. As a rule one can recognize the quality of a person's voice by the physical appearance of the individual. In the more powerfully built types we find voices of the lower register, such as the contralto and baritone; while in the less robust individuals we find the higher voices, as represented by the soprano and tenor.

It should be remembered that voice was made in the resonating chambers and not in the vocal cords. The function of the cords was simply to vibrate. Whispering refers to vibrationless noise or speech. In this the vocal cords do not vibrate, speech coming through the lips or teeth. A falsetto was a species of sound produced by the vibration of the anterior third of the vocal membranes, and was usually found in men with thick necks and powerful vocal cords.

In touching on the treatment, Dr. Ridpath stressed a few practical points. He stated that men with long cords should never try to sing tenor, as their natural voices were baritone or bass.

Singing incorrectly produced a redness of the vocal cords. One should never sing when the stomach is full of food, because the diaphragm cannot be used properly. Neither should they sing when they are fatigued or worried. He said it was a poor thing to tell a singer to rest the voice. They should try humming, whispering or practicing on the middle notes. Dr. Ridpath warned against straining the muscles of the neck to avoid the formation of nodes on the vocal cords. He explained that the vocal node was the result of irritation caused by the organization of the secretion following rupture of the minute glands on the vocal cords. For the singers that came to the laryngologist for relief of a cold on the same day of their performance, he suggested the use of metaphan, 1-5000, to be placed in the nose in the form of tampons or a spray. This should be followed by the application of a 2 per cent antipyrrin solution, which has a drying effect on the nasal mucous membrane and lasts for about five hours. In addition a 5 to 20 per cent solution of menthol in liquid alboline should be used on the vocal cords after previous cocaineization. The entire procedure was to be repeated in six hours. Directly before the performance four or five drops of dilute nitric acid on sugar would have the effect of clearing the voice.

DR. HARRY A. SCHATZ asked the following four questions:

1. What is the opinion of Dr. Ridpath regarding the actual mode of voice or sound production in the larynx? Does he agree with the writer of a recently published article, who claims that the vocal cords do not vibrate in unison, but that the vibration that produces the sound is in the stream of air that passes between the cords, and that it is the alternate rise and fall of the vocal cords that throws that stream of air into vibration. That means they act in sequence, not in unison.

2. To what extent does the length of the trachea, and that of the entire chest, too, for that matter, govern the quality or timbre of the voice?

3. In the cadaver work conducted by me for the past ten years or more it appears that most male adult thyroid cartilages are rigidly ossified, whereas the female and young male always present soft cartilaginous organs, comparatively speaking. How much does this condition control the difference in the voices?

4. Does the treatment recommended by Dr. Ridpath in cases of temporary vocal loss in singers or public speakers in any way entail eventual damage to the voice because of the use of a crippled voice box?

DR. ROBERT F. RIDPATH: In answer to the question about the noncoincident vibration of the vocal cords, he thought that this only occurred in certain singing positions of the vocal cords, where high notes were used and overlapping of the vocal cords occurred. Otherwise it never happened. With reference to the second question, he stated that the long trachea had no part in the long resonating chamber, but that it was due to the function of the aryepiglottic fold which shortened and lengthen the resonating chamber. As to the ossification of the cartilages, he said that it was a natural process as the individual grew older. A man's voice changed at 60 years, and a woman's voice at 50 years. Dr. Ridpath stated that there were no bad effects following the temporary local treatment the day of using the voice.

DR. JAMES A. BABBITT in his experience had seen occasionally in patients a very small larynx, with an unusually curved epiglottis where it was very difficult to get a good view of the vocal cords. He asked Dr. Ridpath the reason for this condition.

DR. RIDPATH said that he did not know.

DR. ROBERT J. HUNTER in his discussion said that he was particularly interested in Dr. Ridpath's discourse since hearing Dr. Negus' paper on comparative anatomy of the larynx at the recent International Meeting of the Collegium Otorhinolaryngologicum in Zurich. In animals that graze, the epiglottis is quite long and projects behind the soft palate so that they can eat and breathe at the same time. In the monkey and ape there is a great development of the false cords, making it possible to hold the air in the chest, thereby helping in the fixation of the chest muscles. This is very useful and important for the animal in climbing from tree to tree. The amphibians have the sinuses of the larynx well developed for rebreathing purposes.

Dr. Henry Dintenfass, *Reporter.*

## THE PHILADELPHIA LARYNGOLOGICAL SOCIETY.

COLLEGE OF PHYSICIANS.

*Meeting of November 1, 1927.*

DR. RALPH BUTLER, *Presiding.*

1. **Presentation of New Instruments**, by Dr. Philip S. Stout; a. **Pistol Tonsil Snare**; b. **Antrascope**.  
(Published in full in this issue.)
2. **Paper: Mastoiditis in Infants**. Dr. George M. Coates.
3. **Paper: Relation of the Sinuses to the General Economy**. Dr. Harry A. Schatz.

(To be published in a subsequent issue.)

### DISCUSSION.

DR. STOUT said that he was very glad that Dr. Coates took the position that he did. Students have been asking for the last two years concerning the opening of the antrum in babies. While it was a simple matter to make an incision in the tympanic membrane, going into the antrum is an entirely different thing and may cause death.

DR. JAS. A. BABBITT: Dr. Coates has presented a timely, thoughtful and very frank consideration of focal infection in the mastoid of infants, perhaps the same conservatism which delayed our freedom in accepting the appendix operation will soon be overcome in this important field. A pediatrician recently called my attention to the "gummy" infective material found in both mastoid antra of a child whose local and X-ray symptomatology were most meager.

DR. HENRY S. WIEDER: I enjoyed Dr. Coates' paper and was particularly impressed with one portion of it, and that is in connection with pneumonia in children. I had an instance of this just last week. I was asked to examine the ear condition of a baby in the ward who had a temperature of 103° for several days. One tympanic membrane looked congested and somewhat dull. I incised the tympanic membrane and although there was a free discharge of pus the temperature did not come down. The next day I reincised for safety. The baby still had a high temperature and there was absolutely no sign of mastoiditis. Several days later the chest was examined and a pneumonia was discovered that had been central and had just come to the surface. The following day there was a crisis. Now, the question was, "Was the ear the possible cause of the pneumonia? If so, did the free drainage from the ear bring about an early result in the crisis?" Although it is true that after you get pneumonia well started you can do little to alter its course, yet it may be possible that the incision in the drum membrane with the resultant discharge did much to shorten the disease.

DR. J. CLINTON KISTLER: The matter that Dr. Coates brought up has recalled to me a paper by Dr. Ersner on diagnosis of mastoiditis. While in Berlin we did some pathological work along this line and it seemed so strange in postmortem examination of children to find the ear that showed no symptoms whatever on the outside, exhibit a mastoid that was filled with the characteristic "gooey" material.

DR. GEORGE M. COATES (closing): Several years ago I was amazed to hear at an open meeting of one of the most prominent societies in this country that in certain cases of infantile diarrhea a bilateral mastoid operation was advised when no otological symptoms were present. Since then this teaching has spread through the Middle West. It is common knowledge that pediatricians in that section when called to treat a case of diarrhea which has lasted for more than several days recommend opening of both mastoid antra. This seems to me to be too radical a procedure. In cases of very sick children with slight otological symptoms, but with high temperature and rapid reduction of

weight, it is justifiable. The pediatrician and the otologist, however, should work together. From Boston a report comes that in 20 consecutive cases of infantile diarrhea with few apparent otological symptoms, death occurred even when mastoidectomies were performed.

Dr. Ross HALL SKILLERN said that he would only discuss Dr. Schatz's paper in a general way. One must remember that the mucosa of the sinuses differed from other membranes, the peritoneum for example. You can infect the peritoneum but you cannot infect the mucous membrane of the sinuses. Experiments have shown that all manner of means were tried to infect the frontal sinuses of dogs by opening them and putting in irritating substances, but in no instance did more than a passing inflammation occur. The sinuses were always capable of taking care of themselves when anything foreign was introduced. He agreed that lowered vitality and lowered resistance was necessary before infection of the sinuses could take place, but as far as liver conditions and increase in blood sugar were concerned, Dr. Skillern doubted if they had more than a temporary influence. He believed that while they could cause congestion of the sinus mucosa, he was rather skeptical as to whether they could actually produce an inflammatory sinusitis.

DR. YAZUBIAN asked, "What is the effect of climate on sinusitis?"

DR. HARRY A. SCHATZ: In answer to Dr. Yazubian's question, Dr. Schatz said that the effect of climate was important, but he would prefer Dr. Yazubian's question answered by men who have had more experience along this line.

DR. P. S. STOUT: We all remember the time of the building of the Panama Canal. Several of my patients went down to paint gates. One had otitis media and during the entire period in the South he had no trouble with his ears whatever. When he came back North his ears began to discharge again. This occurred twice. Another had what I now know to have been sinus disease. While in the Canal Zone he was free from symptoms. On his return to the States the former symptoms recurred. Climate certainly has a great deal to do with these conditions.

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## NASHVILLE ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

*Meeting of November 21, 1927.*

### Tumor of Vocal Cord Removed by Nonsurgical Means. Dr. M. M. Cullom.

Miss O. L. was referred to me by Dr. Prather, of Woodland Mills, Tenn., on June 17, 1927, for persistent hoarseness. She is a professional singer and gives a history of hoarseness over a period of two years. The hoarseness was intermittent until six months ago, since which time it has been continuous. She had a tonsillectomy several years ago. The right tonsillar fossa was clean, but there is a large piece of tonsil on the left side at the base. The hoarseness was first noticed following an acute attack of inflammation on that side. She has had several attacks of inflammation on this side and after each attack the hoarseness was more pronounced. The vocal cords are quite red and at the middle of the right cord there is a small tumor attached to the edge. It is about the size of a grain of wheat, and has the appearance of a soft, vascular growth. The patient, being a singer, has been forced to abandon her work on account of the hoarseness. Patient was advised that the piece of tonsil should be removed. This was done at St. Thomas Hospital on June 18.

Following the removal of the piece of tonsil, the vocal cords whitened perceptibly and the voice improved. Having noticed the marked effect of application of a saturated solution of bichromate of potash upon granulation tissue in the ear, I decided to apply it to the tumor. This was accomplished by the indirect method. A small wisp of cotton was wound upon a laryngeal applicator, dipped in the solution, the excess being squeezed out, and applied to the

growth. This was done several times during the month of July. When she left for home, about July 25, the growth was quite gone and the voice almost clear. She was advised to give the voice as complete a rest as possible, as the use of the voice in singing might cause a recurrence of the growth.

She returned on Nov. 18, almost three months from the time she left. The tumor has entirely disappeared and I do not think it is possible to locate its site. The voice is quite clear. I have advised her, however, not to undertake serious work before the first of the year.

I have been using a saturated solution of bichromate of potash upon granulations in the ear for many years. It has a very pronounced effect in bringing about their disappearance.

#### DISCUSSION.

DR. WOOD congratulated DR. CULLOM upon the success and result of the treatment. He thinks the treatment worthy of trial in other cases.

DR. HASTY said that it never occurred to him to use the solution, except in the ear, but it is really surprising what the solution will do for polypi in the ear.

DR. EUGENE ORR believes the procedure would be unsafe in his hands, though the older men who have had more experience could probably execute it with success.

DR. E. B. CAYCE asked DR. CULLOM how many treatments it required to effect the cure. DR. CULLOM replied, "Once a week for four applications." Also advised complete rest of voice.

DR. CULLOM in closing said: "The growth was small, and I was rather reluctant to subject it to direct treatment if I could avoid it; the reason I did undertake it was that she was a professional singer and had remarkable control, and could display the cords so well. It was not particularly difficult, and the patient did not suffer to amount to anything. The growth gradually grew less and less until it disappeared."

#### Lupus of the Hard and Soft Palate. DR. M. M. CULLOM.

Sister D. consulted me on Oct. 20, 1927, for an ulcerated condition of the hard and soft palate. She was very frail looking. There was an ulcer about the size of a silver half-dollar occupying the region of the median raphe where the hard palate and the soft palate joins. The ulceration has the typical appearance of "lupus". The deposits are in the form of pinhead points, pinkish with a yellow center. The epithelium is destroyed and the ulcerated surface presents a worm-eaten appearance.

Without comment she was referred to DR. DUNKLIN for a general examination. He reported the patient suffering from chronic tuberculosis and diagnosed the ulceration as tubercular. The patient was put upon a regimen of feeding and fresh air, and I undertook the local treatment of the ulceration. The ulcerated surface was cleansed daily with peroxid of hydrogen, after which it was mopped with my solution of formalin and carbolic acid. She was given a spray of the same solution to use several times daily at home. For about three weeks there was no apparent change in the appearance of the ulceration. Then one day I noticed that the surface of the ulcer had apparently lifted up, as it were, all over. The next day when she returned nearly the whole ulcerated surface was gone and had been replaced by epithelium, in appearance differing in no wise from the rest of the palate. In two more days all vestige of the ulcer was gone.

The usual treatment recommended is the vigorous use of the electric cautery or the curette. It seems to me that such treatment would inevitably be followed by destruction of tissue and scarring, and that the restoration of the parts covered with their normal epithelium is preferable.

This is six cases of "lupus" variously situated on the palate, tonsils and pharynx, that I have treated with the solution of formalin and carbolic acid. All were followed by healing.

DR. HERSCHEL EZELL, Secy.-Treas.

